



NINTH ANNUAL REPORT

DOCUMENTS COLLECTION
OF THE
BROCK UNIVERSITY
LIBRARY

COMMISSIONERS

FOR THE

QUEEN VICTORIA NIAGARA FALLS PARK,

BEING FOR THE YEAR

1894.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.



019460

TORONTO:

WARWICK BROS. & RUTTER, PRINTERS, 68 AND 70 FRONT ST. WEST.
1895.

DOC
CA2
ON
NP
A56
1894

NINTH ANNUAL REPORT
OF THE
COMMISSIONERS
FOR THE
QUEEN VICTORIA NIAGARA FALLS PARK.

*To the Honorable GEORGE AIREY KIRKPATRICK,
Lieutenant-Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOR:

The Commissioners of the Queen Victoria Niagara Falls Park beg to submit their Ninth Annual Report, for the year ended 31st December, 1894.

The year has been an exceptionally busy one for the Commissioners, and many matters of great importance to the Park and its outlying precincts have received their careful consideration and decision. In their report for 1893 the Commissioners made reference to the application of the Niagara Falls Park and River Railway Company for permission to double-track their line, on the ground that the Company's experience in handling the traffic of the road during 1893 had demonstrated that the second track was not only essential to the success of the road but absolutely necessary to the safety of the travelling public.

While the Commissioners recognized the fact that in the original agreement made with the promoters of the railway, provision is made, under certain regulations, for a double track, and while they fully admitted the force of the arguments advanced by the Railway Company as to its pressing necessity, they found, nevertheless, there were many serious difficulties in the way of giving their assent to the proposal. Of these difficulties one of the most formidable was the actual want of space (in some places in the park and also in front of the town) for a second track, without unduly encroaching on the public roadway. At such places it was found absolutely necessary either to restrict the company to a single track or bring the two tracks so close together as to practically occupy the space of only one.

Another serious difficulty was the fear that a second railway track through the park would be very objectionable from a scenic point of view, and seriously affect the appearance of the grounds at some of their most interesting points. This subject received much consideration at the hands of the Commissioners, and the system of treatment decided on as best suited to the circumstances of the case was carefully defined.

An agreement was finally arrived at with the Railway Company embodying plans and detailed specifications of construction and finish throughout, under which the work was allowed to proceed, and the second track was completed in time for the season's business. The text of the agreement is as follows:

"This agreement made the 27th day of March, one thousand eight hundred and ninety-four, between the Niagara Falls Park and River Railway Company, of the first part, and the Commissioners for the Queen Victoria Niagara Falls Park, hereinafter called the Commissioners, of the second part.

"Whereas, the Railway Company propose to double track their present single line of electric railway, between Queenston and Chippawa, and have applied to the Commissioners to consent to such work in pursuance of the Act incorporating the Niagara Falls Park and River Railway Company (55 Victoria, Chap. 96) and schedule B thereto.

"And in pursuance of such application the parties hereto have agreed, subject to the approval of the Commissioner of Public Works of Ontario, that the said single line of electric railway shall be made a double track electric railway between Queenston and Chippawa, except at certain points, in accordance with the terms, agreements, provisions and covenants contained in these presents and in the memorandum hereunto annexed, which, with the plans relating thereto, are hereby declared to be and are made part and parcel of this contract;

"And whereas, the present single line of railway is located, or is intended to be located in accordance with the plans of the said line of single railway submitted by the Railway Company to the Commissioner of Public Works, on the eighth day of April, 1892, accompanied by duly identified specifications, dated fourth December, 1891, and deposited in the Department of Public Works, which plan or plans, specifications and matters so submitted to the Commissioner of Public Works, received the approval, on the said eighth day of April, 1892, of the Honorable Richard Harcourt, Acting Commissioner of Public Works, in the terms of a memorandum in writing signed by him on the said eighth day of April, 1892, which said plans and specifications so approved as aforesaid relate to the location of the said present line of single railway, and in so far as applicable, are to be taken in connection with the works and matters appurtenant thereto, to be done and completed, as the doubling of the said single line of railway in the manner hereby agreed to be done;

"And whereas, the draft of the memorandum hereto annexed was, on the fifteenth day of March instant, submitted jointly to the Commissioner of Public Works of Ontario in the person of the Honorable Richard Harcourt, a member of the Executive Government of Ontario, and Acting Commissioner of Public Works, by the President and representatives of the Railway Company, and by John W. Langmuir, Chairman of the said Commissioners, for the consideration and approval of the said Commissioner of Public Works;

"And the said Acting Commissioner having directed that upon the said draft memorandum so submitted to him with certain changes made being embodied, and plans relating thereto, together with a proper agreement duly executed by the Railway Company and the Commissioners, under their respective corporate seals, containing proper covenants and stipulations as he should deem proper for the due and satisfactory completion of the works in the said memorandum contained, and submitted to him (with the said changes being duly embodied therein) the consent and approval of the Commissioner of Public Works to the location and construction of a double track to be completed in accordance with such agreement, together with the other works contained in the said

memorandum, and plans hereinbefore mentioned, would be signified by endorsing such consent on the said agreement under the proper hand of the Commissioner of Public Works ;

“ And whereas these presents have been prepared and executed in pursuance of the matters hereinbefore recited ;

“ Witnesseth, that in consideration of the matters hereinbefore recited, the Railway Company covenant with the Commissioners in manner following, that is to say :

“ 1st. That the Railway Company will execute, construct and complete all and singular the works in the memorandum hereunto annexed, mentioned and intended to be performed, executed and constructed and completed in the best and most workmanlike manner, in the manner required by and in conformity with the said memorandum, and the plans and drawings referring thereto, which said memorandum, plans and drawings are hereby declared to be and are made part and parcel of this contract, and to the complete satisfaction of the Commissioner of Public Works of Ontario for the time being.

2nd. And no alterations, omissions or deviations from the works described in the said memorandum and as shown on the plans (if shown) therein referred to, shall be permitted unless such alterations, omissions or deviations shall have been first approved by the Commissioners by a resolution of the Board of Commissioners communicated to the said Railway Company signed by the Chairman of the Commission.

3rd. That in case of any of the works, or any part or parts thereof to be done, executed and completed by the Railway Company under the first clause of this contract shall, either in the progress of the work being done by the railway company or before its final completion to the satisfaction of the Commissioner of Public Works, as hereinbefore provided, be not proceeded with or done to the complete satisfaction of the Commissioners, the Railway Company will, within eight days after written notice shall have been given to them by the Commissioners of the objections, omissions or matters charged to be improperly done or omitted to be done, duly execute or complete the same in a good, sound and workmanlike manner, to the complete satisfaction of the Commissioners, if the said works, omissions or matters in said notice required to be done are in accordance with the said memorandum hereto annexed and the plans relating thereto as aforesaid or such as should be done in relation thereto.

Signed, sealed and delivered
in the presence of

(Sgd.) WM. T. JENNINGS,
(Sgd.) JAMES WILSON,
as to signature of J. W. Langmuir.

(Sgd.) E. B. OSLER,
President.
(Sgd.) J. W. LANGMUIR,
Chairman.

“ Memorandum of works to be performed by the Niagara Falls Park and River Railway Company in connection with the double tracking of the line and the proper completion of the works required under the agreement with the Queen Victoria Niagara Falls Park Commissioners of December 4th, 1891, and of the Act of incorporation.

"For convenience the line will be divided into four sections, viz.:

"1. From Chippawa to the southeast limit of the Park, a distance of 1 and 3-10 miles. (See plan A).

"2. The Park proper, or from the southeast limit of the Park to the Clifton House, a distance of 2 miles. (See plan B, and amended plans Nos. 1, 2 and 3).

"3. From the Clifton House to the north limit of the Town of Niagara Falls, 2 and 2-10 miles. (See plan B, and amended plans Nos. 3, 4 and 5).

"4. From north limit of the town to Queenston, 6 miles. (See plan A).

"The works in these several sections which are required to be done will be separately defined.

SECTION 1.

"*Location.*—The new track to be located as shown by a thin red line on plan A herewith, the distance between the tracks to be eight (8) feet, or thirteen (13) feet centre to centre.

"*Grading.*—The grading, ditching, etc., etc., to conform to the gradients of the existing track. All cuttings and embankments to have the slopes cleanly cut to a pitch of one and a half horizontal to one vertical, and in all cases where material is borrowed or wasted, the ground shall be levelled off and left smooth and even, and with the slopes of all embankments or cuttings to be sown with grass seed.

"Cattle passes and culverts are to be extended sufficiently to meet the requirements of the case.

"*Permanent Way.*—All rails, fittings, guard rails, ties, ballasting, etc., to be equal in quantity and quality to the existing work.

"*Electrical Equipment.*—The centre-pole system will be adopted in this portion of the line, and the brackets, wiring, etc., shall be patterned after that now in use.

SECTION 2.

"Through the Park proper double tracking may be laid, excepting at the following points, where there shall be a single track only:

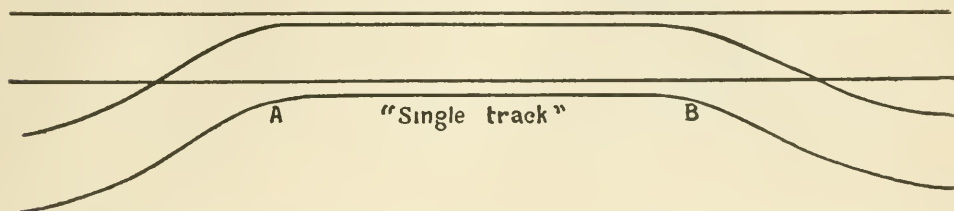
"(a) From a point one hundred and forty (140) feet south of the south side of Table Rock House to a point one hundred and twenty (120) feet north thereof, or a total distance of two hundred and sixty (260) feet.

"(b) From a point twenty-five (25) feet south of the south side of the restaurant building to a point four hundred and ten (410) feet north thereof, or a total distance of four hundred and thirty-five (435) feet.

"Should it be shown that the operation of a single track at the points above specified is dangerous to the public, the Railway Company shall have the right to place a double track to the rear, or west side, of the buildings referred to, viz.: the 'Table Rock House' and the 'restaurant building,' in which case the present single track in front thereof shall be removed.

"In each case the distance given is to cover the space where there shall be one track only, the leads to be beyond this distance in all cases.

"At the several points where single track is required the railway company may either lead the second track into one pair of rails, by means of switches, or carry the two pairs of rails continuously over the distance specified, but laid as closely together as the flanges will permit; thus, in the figure, the distances between A and B shall be considered as single track:



"Crossing the bridges on Dufferin Islands the distance apart of tracks to be reduced to suit the existing bridge structures.

"The location of the second track in the Park proper shall be as indicated on the large scale plan marked B, but with certain amendments thereto, as defined on the several plans marked numbers 1, 2 and 3, and more particularly described as follows:

"Commencing at the southeast limit of Park, the second track shall be located on the landward side of existing one as far as the Dufferin Islands bridge. Across the Dufferin Islands the present track to be shifted to one side sufficiently to permit of the tracks being laid as above specified.

"From the bridge at Clark Hill to a point opposite the gravel pit the second track shall be on the landward side of the present one, which will remain in its present location.

"Between the gravel pit and the head of Cedar Island the tracks may be adjusted to suit the siding at the 'gap,' as shown on the plan.

"From the middle of Cedar Island to the north end thereof the present track shall be slewed over towards the river, a distance of four feet, and the second track placed on the landward side. From Cedar Island to Table Rock the tracks to be placed as shown on plan No. 1.

"North of Table Rock House the present siding will be extended towards the restaurant building until the switch is within twenty-five (25) feet of the south side thereof. From this point there shall be a single track for a distance of four hundred and thirty-five (435) feet, or to a point beyond the road crossing, as shown on plan No. 2.

"North of the roadway crossing, the existing and new tracks shall be adjusted, as shown on plan number 2; they must be located so as to allow a clearance of twelve (12) feet between the present railing along the edge of the cliff and the nearest rail at the narrowest points.

"Near the north end of the Park the tracks are to be located as shown on plan No. 3.

"No sidings or cross-overs are to be laid within the Park without the consent of the Commissioners being first had in writing, and all existing sidings are to be removed excepting at such points, as they will form a part of the double track, as has been particularly described and shown on plans.

"*Grading, etc.*—The formation level of second track in the Park shall be the same at all points as that of existing one; the slopes of all cuttings and embankments are to be trimmed to the proportion of one and one-half horizontal to one vertical, excepting on the Burning Spring hill, where the slope

shall not be less than one and one-fourth horizontal to one vertical. The face of the slopes of all cuttings and embankments, excepting that of the Burning Spring, from the ties to the natural ground level, shall be sodded with newly-cut sods, cut in large strips and thoroughly pegged with long hardwood pegs. This sodding shall be done immediately after the slope shall have been put in good order and condition, and not later than the 1st July, 1894; and the grass on all such slopes must be kept by the Railway Company close cut at all times, to the full satisfaction of the Park Commissioners. The slope of the Burning Spring hill shall be sown with good grass seed and planted with thrifty foliage trees or evergreens.

"Five feet of the space between tracks shall be levelled off even with the top of ties and covered with sods, and maintained in a thoroughly lawn-like condition at all times.

"The side slope of cutting east of the Dufferin gate must not interfere with the driveway along the top of the bank at any point; but a minimum space of twenty-four (24) feet must be preserved intact at the nearest approach to the Park boundary of the top of the finished slope.

"Should the prescribed angle of slope, if carried from formation level, curtail this space, sufficient land must be secured and deeded to the Commissioners as shall at all times afford the full width of twenty-four (24) feet for driveway purposes.

"*Roads and Paths.*—Where the railway crosses the Park driveway on Dufferin Islands, the embankment must be widened out sufficiently so as to permit of a carriage turning completely around, clear of the rails, without danger to the occupants thereof.

"The footpaths crossing the railway on islands must be graded and gravelled to the satisfaction of the Park Commissioners. The portion of the driveway occupied by the second track, from the gardener's house to the gravel pit, to be compensated for by widening out the driveway on the landward side to the full width, clear of the ballast, of eighteen feet, and forming and macadamizing and rolling the surface thereof to a true and hard finish. The slopes of cutting made on the south side of driveway by this widening to be trimmed and sodded.

"*Driveway on Cedar Island.*—Where the driveway on Cedar Island is encroached upon similar compensation must be provided, and the space between the rails of the second track shall also be macadamized and rolled and made fit for driving over for such distance as may be decided on by the Park Commissioners. The roadway at north end of Cedar Island, when widened as above described, shall be carried over the original channel of river to the mainland by a suitable bridge structure, to be erected by the Railway Company to the satisfaction of the Commissioners. All driveways and pathway crossings now in existence, or which hereafter may be required by the Commissioners, must be planked the full width of the space occupied by the tracks, and of such lengths as may be approved by the Park Commissioners, and the crossings maintained in good order and condition at all times.

"*Gravel Pit.*—The gravel-pit track to be removed at once and the sides of pit sloped off neatly to an even pitch. A supply pipe of sufficient dimensions to maintain a full head of water, and not less than eight inches in diameter, to be laid from the river at the iron railway bridge at Clark Hill to the gravel pit, and an overflow of equal dimensions to be laid from the pit to the river adjoining; the bottom of pit to be graded evenly and the boulders either removed or made to form an island in the centre.

"*Dam at Channel Inlet.*—The dam placed at the channel inlet to Cedar Island to be removed and the inlet cleared of the debris. A proper outlet

shall also be provided by the railway at the north end of Cedar Island, so as to permit this branch of the river to flow on in its natural channel.

Permanent Way.—The permanent way for the new track to be generally of a similar character to that of existing one: Ties to be eight feet in length, of sawn cedar, and placed two feet apart centres; stone ballast only to be used, and the width occupied by the ties in each of the two tracks over that portion or portions of the line which may be required by the commissioners to be covered with a top dressing of finely broken stone to a thickness of two inches above the ties and evenly spread, and the surface blinded with stone that shall pass through a half-inch ring. The space between the ends of the ties of the two tracks to be levelled and sodded.

Cattle Guard.—A steel cattle guard to be put on new track at north limit of Park.

Ferry Crossing.—Where the tracks cross the road leading to the 'Maid of the Mist' ferry, the road must be graded up to an even and satisfactory slope with finely broken macadam, and the tracks planked over even with rails to provide a crossing of twenty-four feet along the railway.

Surplus Grading.—At any points where grading has been done or material placed in excess of the actual requirements of railway embankments, it must be removed and the original ground resodded and left in good condition.

Electrical Equipments.—The iron poles will, in nearly all cases, have to be taken up and replaced in new positions. In replacing the poles, the concrete packing shall not be carried above level of centre of ties, good soil being spread evenly above to permit of sods being maintained around poles on an even level with balance of work. Where the poles are at present outside of the grading of the railway when finished, the excavations made therefor are to be well filled up and sodded over evenly with surface of adjoining ground.

Iron poles are to be substituted for the wooden ones now carrying feeder wires at power station.

Paint Poles.—All poles are to be painted afresh when properly in position and left truly plumb and complete in all respects. All guy or straining wires must be so placed as not to obstruct travel on roads or paths.

SECTION 3.

Double Tracking Opposite Town Front.—In front of the town double tracks may be laid over the whole distance, excepting at the Clifton Suspension Bridge, where there shall be single track only, for a distance of two hundred and fifty feet south of the centre line of the bridge and fifteen feet north of the centre line of bridge, or a total distance of two hundred and sixty-five feet.

Location of Second Track.—Commencing at the park boundary, the new track shall be placed on the river side of existing one until opposite the north end of the Clifton House, where it will become and continue single track to the bridge, as before mentioned, and as shown on plan No. 3. North of the bridge the second track will be laid on the landward side of the present one as far as Seneca street siding, where the two tracks will form part of the system, as shown on plan No. 4; the leads on either side being lengthened out to ease the curvature, and the space between the tracks being narrowed in.

Queen Street.—Beyond the Seneca street siding the double track will continue on the landward side of existing track to opposite Queen street, where both tracks shall be deviated towards the river as indicated on plan No. 5. From this deviation the second track shall continue on the west side of the present track as

far as the Cantilever bridge, where the two tracks shall be located as shown on plan 'B.' From Bridge street station northwards for about a quarter of a mile the second track shall be placed on the river side of present one and from thence to north boundary of the town the new tracks shall be to the westwards, as shown on plan 'B.'

" *Width Between Tracks.*—From the park limits to the north boundary of the town the distance between the tracks shall not be more than eleven and one-half feet centre to centre, excepting at points where there are sharp curves, where the space between tracks may be made six inches wider.

" *Grading.*—The formation level throughout shall be the same as that of present track. The width to be graded covering the space between tracks and the space required for the new track.

✓ " *New Roadway.*—In addition to this track space the Railway Company shall grade the roadway to the west of the new track for a width of eighteen feet from the line of ties and to a pitch of three inches from the level in the width of eighteen feet; the surface grading to be level with the base of ties where the roadway shall adjoin the track. This grading for roadway to be made the whole distance of two and two-tenths miles covered by this section of the line; all side slopes of cuttings or embankments to be trimmed true to line and level, and graded to 1 and $\frac{1}{2}$ to 1.

" *Ballast.*—Ballasting of second track throughout to be of gravel or broken stone ballast, well packed around ties and even with the top of them. Space between tracks also to be ballasted up evenly therewith.

" *Finish of New Track.*—The space between the two tracks and the width occupied by new track to outside or westerly line of the ties must be macadamized up to and maintained even with the level of top of rails and rolled suitable for driveway purposes, where the driveway may be encroached upon.

X " *Macadamized Roadway.*—In addition to the above works the Railway Company shall macadamize the roadway bed, when graded as aforesaid, to a width of sixteen feet from line of ties, and for a length of one-half the total distance covered by this section of the line, or say one and one-tenth miles from the Clifton House northwards. The macadam to be rolled and even with the top of the rail at the east side and sloping down to the west side of the roadway three inches from a level line, in order to drain the surface water therefrom.

" The above described work of grading for and macadamizing one-half of the length of the roadway for carriages, shall be begun and carried on with despatch and in such a manner as not to interfere with the ordinary travel over said road, and shall be completed not later than the first day of July, 1894, and shall be to the satisfaction of the Park Commissioners, and of the honorable the Commissioner of Public Works.

" *Sidewalk.*—Where it is necessary in the performance of these works to interfere with or change the sidewalk, the same shall be relaid in position satisfactory to the Commissioners and left in good order and condition.

" *Cross Drains.*—A sufficient number of cross drains must be put in to effectually carry off the surface water. Should the above-described works interfere in any way with the present side ditches on the road, full compensation must be made by providing new and satisfactory ditches, and where the space between the tracks and the present fences of adjoining properties is insufficient to permit of an open drain being laid down, a covered one of size and material satisfactory to the Park Commissioners must be put in and properly connected with the cross drains so as to preserve the present drainage.

"Iron Railing of Fence to be Put in Good Condition.—The iron railing along the edge of the cliff shall be put in good order and condition, and where it shall have been in any way interfered with it shall receive two good coats of oil and lead paint.

"Location of Poles.—Over this section of the railway, from the Clifton House to the railway suspension bridge, the poles carrying the wires shall be on the outside or cliff side of the tracks, and straining posts shall be placed opposite to these and on the west side of the roadway in such positions as may be pointed out on the ground by the Park Commissioners. The trolley wires shall be suspended over the two tracks from straining wires running from the main posts to straining posts. All the electrical work to be the best of its class and sufficient for the duty required of it.

SECTION 4.

"This section may be subdivided into two parts, viz., from the north limit of the town of Niagara Falls to the military reserve at Queenston Heights, and secondly, through the military reserve grounds at Queenston and including the village of Queenston.

"Subsection 1.—As to the first described section, or from the town of Niagara Falls to Queenston Heights, the following described works shall be done and performed by the railway company, viz.:

"Location of Double Track.—The double track throughout the section shall be, generally speaking, on the west of the existing line of rails, excepting through the lands purchased from Sir David Macpherson, where the new track may be placed on the east side of the present one if found desirable to lighten the work of excavation at that point.

"Change of Location.—With respect to the proposed change of location of the existing track and the building of the new one at Sineaton's gully, approval is withheld pending the submission of plans and specifications showing precisely the nature of the changes proposed, together with drawings of the bridges, piers, abutments, etc., as required under the agreement of December 4th, 1891, and the Act of Incorporation. The new track to be placed at a distance of eight feet from existing one, or say thirteen feet centre to centre.

"Grading.—The grading, ditching, etc., etc., throughout are to conform to the lines, levels and requirements of the present track. The space between the two tracks must be graded evenly with the sub-grade level of track, and all farm crossings or other work required be made complete in all respects. All cuttings and embankments are to have the slopes cleanly cut to a pitch of one and one-half horizontal to one vertical, and in all cases where material is borrowed for such embankment or wasted from such cuttings, the surface of the ground so interfered with shall be levelled off and left smooth and even, and, together with the slopes of all embankments or cuttings, be properly covered with good soil and sown with grass seed.

"Cattle passes and culverts.—Cattle passes and culverts are to be extended sufficiently to meet the requirements of the case.

"Permanent way.—The rails, fittings, guard rails, ties, ballasting, etc., etc., shall be equal in quality and quantity in each case to that of the existing track.

"Electrical equipment.—The centre-pole system will be adopted in this portion of the line, and the brackets, wiring, etc., shall be patterned after that presently in use

Subsection 2.—Respecting the portion of the line located through the Military Reserve at Queenston Heights and in the Village of Queenston, approval to lay a double track is withheld pending the reception of a proper license of occupation from the Dominion Government to the Park Commissioners. When such license of occupation is received, permission to lay double track will be granted on the following conditions, viz., the location of the second line of rails to be as shown on plan A herewith. No trees that are not actually on the roadbed, or on the side slopes of graded embankments or cuttings shall be cut or maimed without the express sanction of the Commissioners.

“All slopes of cuttings or embankments are to be trimmed properly and sown with grass seed. The drive-way leading from the highway to Brock’s Monument shall at the crossing be put in good condition for driving over; approaches to the tracks to be graded to an easy slope and well macadamized and rolled, and a wide plank crossing provided. Where pathway from the monument leads down the slope to the village, a suitable crossing over the tracks to be provided, including stairways on the graded slopes and a plank walk over tracks.

“All debris deposited upon the lands of the reserve by the Railway Company in excess of the works actually required for the purposes of the railway shall be removed and the grounds left in as good order and condition as originally found by the Railway Company.

“All the above described works shall be done and performed by the Railway Company to the entire satisfaction of the Honorable the Commissioner of Public Works and of the Park Commissioners, and with the exception of the several works for the performance of which approval is in the meantime withheld, all works above described and shown on plan or intended to be so described and shown shall be fully performed on or before the fifteenth day of June, 1894.

“Should any of the above described works be unfinished or be considered by the Park Commissioners to be not finished to their satisfaction on the above-mentioned date, the Park Commissioners reserve the right, on giving one week’s notice in writing to that effect to the secretary and the manager of the Railway Company, to go on and carry out the several works to their satisfaction and to collect the cost of performing the said works from the Railway Company.

(Sgd.) JAMES WILSON,
Superintendent.

NIAGARA FALLS, 12th December, 1893.

“It is understood that nothing contained in this agreement or memorandum shall interfere or prejudice the Railway Company’s rights as set forth in the original agreement and Act of Incorporation.

(Sgd.) J. W. LANGMUIR,
Chairman,
Queen Victoria Niagara Falls Park Commissioners.

(Sgd.) E. B. OSLER,
President,
Niagara Falls Park and River Railway Company.

TORONTO, 28th March, 1894.

“I, the Honorable Richard Harcourt, Acting Commissioner of Public Works for Ontario, do consent and approve of the within agreement and memorandum annexed thereto, subject to the sufficient quantity of land east of the Dufferin

Gate and top of the bank agreed to be deeded to the Commissioners for the purposes of affording full width for driving purposes, as stated in the fifth page of the memorandum, being duly conveyed and deeded to the said Commissioners within three days hereof; the sufficiency in quantity and area to be such as the Park Superintendent shall determine.

Witness my hand this 28th day of March, 1894.

(Sgd.) RICHARD HARCOURT,
Acting Commissioner of Public Works.

The doubling of the track in front of the town of Niagara Falls necessitated some changes in the location of the driveway along the Chain Reserve, which is vested in the Commissioners, and negotiations were entered into between the town authorities and the Commissioners with a view to having a better class of roadway provided and maintained. These negotiations resulted in an undertaking by the representatives of the town to pay the sum of one thousand dollars towards the cost of construction of the road and to pay one-half the outlay for maintenance thereafter. The greater part of the driveway has been graded even with the railway and macadamized, and when the town implements its undertaking the remainder of the work will be performed.

Early in the season efforts were made by the Railway Company to establish a steamboat service between the upper terminus of the railway at Chippawa, a village at the confluence of the Welland and Niagara rivers about two miles south of the Falls, and the city of Buffalo, some eighteen miles farther up the river, and arrangements were made to put on a first-class steamer. It was found that owing to the size of the steamer proposed for this work, great difficulty would be experienced in turning around in the narrow stream at the Chippawa terminus. It was also discovered that a wide-spread feeling prevailed that it would be more or less dangerous to approach so near to the rapid waters of the Niagara as the entrance to the Welland river necessitated. Application was therefore made to the Commissioners by the Railway Company for permission to extend the railway across the Welland river and southward upon the Chain Reserve to a point on the Niagara where navigation is considered to be perfectly safe. The Commissioners sought and obtained the sanction of the Legislature to act in the premises, and on the 7th May, 1894, entered into an agreement with the Railway Company by which authority was granted them to extend the line for about two miles to a point locally known as Slater's Point, and the line was constructed in time for the opening of tourist navigation. As the Railway Company claimed the project was entirely in the nature of a venture which might have to be abandoned for lack of support in a year or two, provision was made in the agreement for a temporary construction, to be replaced, should the line be permanently established, by a construction equal to that of the then existing railway.

The text of the agreement is as follows:

"This agreement made in quadruplicate the seventh day of May, one thousand eight hundred and ninety-four, between the Commissioners for the Queen Victoria Niagara Falls Park, hereinafter called 'The Commissioners,' of the first part, and the Niagara Falls Park and River Railway Company, hereinafter called 'The Railway Company,' of the second part.

"This agreement may be known as the Chippawa Extension Agreement.

"Whereas the Act of the Legislature of Ontario incorporating the Niagara Falls Park and River Railway Company (55 Victoria, Chap. 96) empowered the Railway Company to construct and operate extensions of their electric railway from Chippawa to Fort Erie and from Queenston to the Town of Niagara, as may be determined ;

"And whereas in respect of the extension of the electric railway from Chippawa, the Legislature of Ontario, by an Act passed at the recent session respecting the Queen Victoria Niagara Falls Park, enacted that 'The Commissioners and the Niagara Falls Park and River Railway Company may enter into an agreement to extend the existing electric railway from Chippawa along the bank of the River Niagara southerly to a point on the said river not exceeding two miles from Chippawa,' and it was by the said Act further provided that 'such agreement shall provide for the location and mode of construction of the said railway, and may include matters similar to such as are contained in the agreement of 4th December, 1891, between said parties, and in the Act passed in the 55th year of Her Majesty's reign, Chapter 96, validating said agreement, and may be on such terms and conditions as the Commissioners and the Railway Company agree on,' and that 'such agreement shall have no force or effect without the approval of the Lieutenant-Governor in Council, and on such approval the Railway Company may exercise in respect of such extension the powers exercisable by the said Railway Company in respect of the construction and operation of the Electric Railway between Queenston and Chippawa, under the said Act, 55 Victoria, Chapter 96, and in accordance with the limitations therein contained, so far as the same may be consistent with the agreement aforesaid.'

"And whereas in pursuance of such powers, the Commissioners, subject to the approval of the Lieutenant-Governor in Council and the Railway Company, have defined the terminus of the said extension railway at a point about one and a half miles to the south of Chippawa on the Niagara river, and the said parties have, in pursuance of the powers conferred by the said Act of the recent session agreed, subject to the approval of the Lieutenant-Governor in Council, as aforesaid, in manner following :

"Now therefore these presents witness, that is to say :

"1. The location of the extension line to be from that point of the existing railway opposite to the public bridge, thence over the said public bridge over Chippawa creek (or Welland river), and thence easterly along the highway on the south side of the Chippawa creek until such highway joins the reserve in front of the lots bordering on the Niagara river and generally described as the Chain Reserve and thence along the westerly side of the Chain Reserve to the before mentioned terminus on the Niagara river.

"2. Such location through the village of Chippawa and over said public bridge to be in accordance with the by-laws or resolutions of the municipal council of the village of Chippawa or other proper authority, and also of such regulations as the Governor in Council has made, or may from time to time make, in respect of crossing the said Chippawa creek by the said public bridge or otherwise.

"3. The railway to be built between the point on the existing railway opposite the bridge at Chippawa and the terminus on the bank of the Niagara is to be a double track, except over the bridge at Chippawa, and between certain points hereinafter provided, where a single line only as hereinafter provided may be deemed sufficient. The eastern track of the railway to be on the western side of the Chain Reserve, and to the west thereof shall be laid the western railway

track, and on land still further to the west, but immediately adjoining, a road shall be formed to be used as a public highway. Such works and matters by the Railway Company to be done and provided shall be as specified more particularly as follow :

“A. The Railway Company shall, without unnecessary delay, vest in the Commissioners, for public purposes, so much of the lands lying to the west of the Chain Reserve along the bank of the Niagara river and south of the village of Chippawa as may be contained by a line drawn parallel with the westerly line of the reserve as presently defined upon the ground and distant sixty feet therefrom, and extending from the mouth of the Chippawa river southwards for a distance of about one and a half miles, or to such point as will be the terminus of the proposed railway, within two miles from Chippawa. Where arbitration proceedings are taken the title to be vested in the Commissioners, to be one month after the final award in such matters.

“B. The Railway Company shall form a roadway on the lands above described, with properly graded and crowned roadbed of not less than twenty-four feet in width, and provided with substantial side ditches and cross drains of a capacity sufficient to carry off the water at all seasons of the year. The Railway Company shall fence the westerly limit of the new roadway with a substantial post and wire fence. No other fences shall be erected.

“C. The Railway Company may put down upon the present Chain Reserve a single track railway from the village of Chippawa southwards for a distance not to exceed two miles, and as indicated on the plan ‘A’ herewith, the course of said track to follow the general line of the fence bounding the Chain Reserve on the west as closely as safety will permit. In addition to the single track thus defined, one or more sidings will be permitted at or near the site of the proposed steamer landing, in the locations and of such lengths as may be approved of by the Commissioners. Until the completion of the works described in paragraph ‘B’ to the satisfaction of the Commissioners, the travelled way upon the reserve shall be preserved. Where the space is too narrow to admit of the track clear of the roadway, the space occupied by the track shall be planked over and made safe for the passage of vehicles, to the approval of the Commissioners.

“D. When the Railway Company shall have acquired and vested in the Commissioners the lands above described, and shall have formed the roadbed and provided the ditches and watercourses in a manner satisfactory to the Commissioners, the Commissioners authorize the laying of a double track parallel with and co-terminus with the line of railway provided in paragraph ‘C,’ and at the usual distance therefrom.

“E. The Railway Company shall not occupy any of the lands east of the railway tracks, excepting for sidings near the steamer landing as before provided. Where the erosive action of the river may necessitate the building of crib work or other desirable form of protection from time to time, the same shall not be carried above the level of the tracks of the railway. The right to build such crib work or other protection, at exposed points, shall not be construed as affording the Railway Company any rights in the lands so used.

“F. The Commissioners, so far as they can, shall license to the Railway Company the occupation of a water lot at the proposed site of steamer landing, but not exceeding two hundred and fifty feet along the river, for the erection of a wharf, but such wharf shall not project out into the river a greater distance than one hundred feet at any point, or such distance as may be necessary to reach deep water.

"G. Should the Commissioners desire at any time hereafter to open roadways or other crossings over the tracks of the Railway Company to afford access to the water or water lots, the Railway Company shall provide proper facilities for crossing the tracks.

"H. The character and finish of the works to be done under this agreement shall be subject to the approval, from time to time, of the Commissioners.

"J. If in the opinion of the Commissioners, there is sufficient space on the Chain Reserve, opposite to the lands formerly the property of Dr. Macklem, and within the village of Chippawa, to admit of a single line of railway without unduly encroaching upon the travelled highway, the Railway Company shall not be required to provide the full width of sixty feet to the west of the Chain Reserve over and across this property (a distance of 300 feet, more or less) as provided for in paragraph 'A' of this agreement, but may leave the same in abeyance until a double track is required. The single track in front of this property shall be located to the approval of the Commissioners.

"K. The Railway Company shall, without unnecessary delay, build the new road on the west side of the railway, and until the same has been completed will give the accommodation necessary for public traffic on the existing roadway, and will protect the Commissioners or any others interested against any claims by reason of the occupation of the highway.

"5. And for the due execution and performance of the said works the Railway Company may exercise all the powers which are vested in the Railway Company to be exercised under The Railway Act of Ontario, under the agreement of 4th December, 1891, and by the Act 55 Vict. chap. 96, validating the same.

"6. And it is further witnessed and agreed that the Railway Company shall operate the extension henceforth, and in the event of the Railway Company omitting to operate the same between the months of May and November in any year, the Railway Company, upon notice in writing by the Commissioners to the Railway Company, shall, within three months after such notice shall have been given, remove their rails and superstructure from off the extension, and all right and interest of the Railway Company therein shall thenceforth cease, except that the Commissioners will be liable to pay the Railway Company one-half the actual cost of the strip of sixty feet acquired by the Railway Company for the purposes and requirements of section 'A' of the fourth paragraph of this agreement, such actual cost being the sum paid by the proprietors for the acquisition of such land by contract or arbitration, as the case may be, and of which actual cost the Railway Company shall furnish the Commissioners with the amount and particulars of payment within six months from the date thereof, and in the event of arbitration proceedings, if any, not then terminated then within one month of the termination of such arbitration proceedings.

"7. And it is further agreed that at any time after three years and within four years from the date thereof, the Railway Company continuing to operate the said railway, the Commissioners shall have the option to determine that the extension, including the dock and terminus thereof, shall form part of the existing system of railway of the Railway Company between Queenston and Chippawa.

"8. The said option shall be signified in writing under the corporate seal of the Commissioners as given in pursuance of this agreement, and thereupon and within three months thereafter the Railway Company shall make such extension, railway in all matters as to materials, work and plant to conform, and be equal in respect of construction, permanent character of works, in accordance with the

provisions and specifications of the railway between Queenston and Chippawa, as agreed to be built under the agreement made between the Railway Company and the Commissioners on the 27th day of March, 1894, and as to the terminal point on the Niagara river in accordance with the 9th section of the agreement of the 4th of December, 1891, which said works shall be subject to the same requirements and approval of the Commissioners and the Commissioner of Public Works for Ontario as in the said agreement and by the Act, 55 Victoria, chapter 96, are provided.

"9. And in the event of the said option being exercised by the Commissioners, such extension shall form part of the railway system between Queenston and Chippawa, and shall thenceforth be subject to the same terms and conditions of tenure terminating at same periods, and subject to the same rights of compensation and modes of ascertainment thereof, and of rights of the Commissioners as between the Railway Company and the Commissioners, as specified and contained in the agreement of 4th December, 1891, and in the Act passed in the 55th year of Her Majesty's reign, chaptered 96, validating said agreement.

"10. To prevent misapprehension and ambiguity, it is hereby declared and understood that until the said option in the foregoing seventh paragraph of this agreement is exercised by the Commissioners, the Railway Company shall not be required to convert the said extension into a work up to the standard of their said existing railway.

"In witness whereof, the corporate seal of the Commissioners has been hereunto affixed by their chairman, who has also signed the same, and the corporate seal of the Railway Company has also been hereunto affixed, and the president and secretary of the Railway Company have affixed their signatures, the day and year first above written."

Signed, sealed and delivered by the
chairman of the Commissioners,
in the presence of

(Sgd.) JAMES WILSON,

and by the Railway Company
in the presence of

(Sgd.) G. T. CHISHOLM.

(Sgd.)	J. W. LANGMUIR,
	Chairman,
	The Niagara Falls Park and River
	Railway Company.
(Sgd.)	E. B. OSLER,
	President.
(Sgd.)	R. A. SMITH,
	Secretary.

Acting under the authority obtained at the last session of the Legislature (57 Vict., Cap. 13), and with the approval of the Government, agreements were entered into with the Clifton Suspension Bridge Company (Carriage) and the Niagara Falls (Railway) Suspension Bridge Company, in respect to the occupancy of portions of the Chain Reserve and talus by their structures. In each case it is proposed to erect new and more substantial bridges to accommodate the increasing traffic, and facilities were desired in order to accomplish this end. In

both instances the Commissioners exacted compensation for the present occupation of a portion of the Chain Reserve by the bridge piers by securing lands to the west of the Chain Reserve sufficient to widen out the driveway at these points. In these agreements the Commissioners also reserved a right of way for the projected low-level railway in the gorge near to the water's edge, and otherwise provided for the future interests of the Park.

These agreements are as follows:

"Agreement between the Commissioners of the Queen Victoria Niagara Falls Park and the Clifton Suspension Bridge Company.

"As per Schedule to Bill No. 41, 'An Act to amend the Acts respecting the Clifton Suspension Bridge Co., 1894'".

SCHEDULE.

"Memorandum of agreement made this 11th day of April, A.D. 1894, between the Commissioners of the Queen Victoria Niagara Falls Park (hereinafter called the Commissioners) of the first part, and the Clifton Suspension Bridge Company (hereinafter called the Bridge Company) of the second part;

"Whereas the Bridge Company are the proprietors of a suspension bridge across the Niagara river below the falls;

"And whereas the said Bridge Company have by their petition applied to the Parliament of Canada at its present session for an Act empowering them, amongst other things, to construct another bridge across the said Niagara river north of the present structure, together with the right of operating railway cars across the same;

"And whereas the said Bridge Company are by virtue of a grant from the Crown, dated the twenty-eighth day of January, 1873, the proprietors of a strip of land two hundred feet in width along the Niagara river, and otherwise more particularly described in the said grant and the plan therein referred to and subject to the exceptions therein contained upon part of which the present structure of the Bridge Company is situate;

"And whereas by certain Acts of the Legislature of Ontario, the Commissioners have vested in them that part of the highway which is excepted from the operation of the grant to the Bridge Company hereinbefore referred to;

"And whereas it may be necessary for the construction of a new bridge and the operation of electric or other cars over the same, moved by any power except steam, that the Bridge Company should have the right to cross the said highway or otherwise encroach or interfere with the same, and subject to arrangement with the Niagara Falls Park and River Railway Company to cross or otherwise interfere with its tracks;

"And whereas the Commissioners contemplate the construction at some future time of a low level railway line underneath the bridges of the Bridge Company near the water's edge of the Niagara river, and for that purpose desire to have the piers of the Bridge Company so constructed as not to interfere with the construction or operation of the said railway;

"And whereas the said parties have agreed to make the mutual concessions which each desires from the other;

"1. Now, therefore, this agreement witnesseth that in consideration of the premises and of the mutual covenants and agreements between the parties, the Bridge Company hereby grant unto the said Commissioners the absolute and

irrevocable right to construct, maintain and operate below the bridges of the Bridge Company and across the property hereinbefore referred to, granted by the Crown to the Bridge Company, a double track line of railway.

"2. It is agreed on the part of the Bridge Company that any piers or abutments or other portions or appliances of any bridge built by the Bridge Company shall be so located as to admit of the said low level railway as a double line, and on the part of the Commissioners it is agreed that they shall not injure, prejudice or interfere with any such piers, abutments, or appliances in the construction or operation of the said low level railway.

"3. The Commissioners hereby covenant and agree with the Bridge Company that the Bridge Company shall have the right to erect their bridge structure and operate their cars over the said bridge and across the highway upon and opposite to the lands vested in the Bridge Company as hereinbefore mentioned, and subject to arrangement with the Niagara Falls Park and River Railway Company, and to such order as the Railway Committee of the Privy Council may make to cross the tracks of the said Railway Company.

"4. In the event of the Bridge Company deciding to build upon the cantilever principle, they shall be at liberty to place such portion of their said structure as may be necessary under the said highway in front of the lands aforesaid, provided always that they shall not interfere with the using of the same by the public or the said Niagara Falls Park and River Railway Company.

"5. And in the event of the Bridge Company deciding to build a double deck bridge on the lands aforesaid, it shall be competent for them to cross the said highway with an arch or truss, subject to approval of the plans of the said crossing by the Commissioners and by the Railway Committee of the Privy Council.

"6. It is agreed that in the event of such a structure being decided upon for the new bridge as will require guys for its maintenance, that the same may be placed or affixed to portions of the bank belonging to or under the control of the Commissioners, and also that the guys to the present structure shall not be interfered with, and also that it shall not be necessary for the Bridge Company to change or alter the location of the towers of the present bridge. Provided always that the said guys must be so arranged as not to interfere with the said low level railway, and that the Bridge Company will from time to time, at the request of the said Commissioners, so change the location of the said guys outside the lands of the Bridge Company to such point or structure as the Commissioners may desire, but no such change shall be directed as shall endanger the safety of the said bridges.

"7. It is also agreed that the cables used by the Bridge Company in its present bridge shall not be interfered with, and they shall also be at liberty to stretch across the said highway any cables which it may be necessary for them to use in connection with the new structure or in substitution of any cables at present in use or hereafter to be used in connection with the said bridge, or either of them.

"8. The Bridge Company shall grant and quit-claim to the Commissioners all the right, title and interest of the said Bridge Company of, in and to so much of their lands on the west side of the Chain Reserve as may be contained by a line running from the present southeast corner of the verandah of the Cliff House to a point situate twelve feet to the west of the front line of Hawley's Museum for the purpose of dedicating the same to the public as a portion of the adjoining highway.

"9. The covenants and agreements herein contained shall be binding upon the said Commissioners and their successors, and upon the said Bridge Company, their successors and assigns.

"10. The Bridge Company shall not exercise any powers vested in such company in relation to the lands and property vested in the Commissioners, nor shall the Bridge Company have any rights in relation to the same other than such as are in this agreement contained, or as may hereafter be agreed upon between the Commissioners and the said Bridge Company.

"11. It is agreed that in the event of the Bridge Company failing to get an Act from the Parliament of Canada at the present or next session thereof for the purposes hereinbefore referred to and constructing a bridge thereunder, this agreement and all the covenants and agreements therein contained shall be absolutely null and void, but upon the passage of such Act of Parliament this agreement shall take effect and be binding upon the parties thereto from the time of the passing of such Act.

"In witness whereof the said parties have hereunto set their hands and seals.

Signed, sealed and delivered in
the presence of

(Sgd) JOHN S. READ,
Teller.

JOHN W. LANGMUIR,
Chairman.

[Corporate seal of the Commissioners
of the Queen Victoria Niagara
Falls Park.]

CHARLES H. SMYTH,
President.

[Corporate Seal of the Clifton Suspension
Bridge Company.]

"Memorandum of agreement made this third day of May, A.D. 1894, between the Commissioners of the Queen Victoria Niagara Falls Park, hereinafter called the Commissioners of the first part; the Niagara Falls Suspension Bridge Company, hereinafter called the Bridge Company of the second part; and the Niagara Falls Park and River Railway Company of the third part.

"Whereas the Bridge Company are proprietors of the Railway Suspension Bridge crossing the Niagara river below the falls;

"And whereas the said Bridge Company have by their petition applied to the Parliament of Canada at its present session for an Act empowering them, amongst other things, to construct another bridge across the Niagara river, together with the right of operating railway cars, electric or cable, or other railway across the same;

"And whereas by certain Acts of the Legislature of Ontario, the Commissioners have vested in them certain lands herebefore vested in the Crown;

"And whereas it is desirable in the interest of the Park that certain lands, the property of the Bridge Company, should be vested in the Commissioners;

"And whereas it is desirable that certain other lands, now vested in the Commissioners, should be granted by irrevocable and perpetual license by the

Commissioners to the Bridge Company for the purpose of the undertaking of the Bridge Company ;

“ And whereas the parties hereto have agreed to make the mutual concessions which each desires from the other ;

“ 1. Now, therefore, this agreement witnesseth, that in consideration of the premises, and of the mutual covenants and agreement between the parties, the Commissioners hereby grant and confirm the title in fee to the Bridge Company of the lands on the Chain Reserve now occupied by the bridge structure and offices and bridge supports of the Bridge Company. And the said Commissioners do also hereby grant to the Bridge Company irrevocable and perpetual license the exclusive occupation of a piece of land seventy feet in width on the north side, and a piece of land seventy feet in width on the south side of the lands, the title to which has been confirmed by the conveyance of the Commissioners hereinbefore referred to.

“ And also down the talus or slope of the bank to within eighty feet of ordinary high water mark of the Niagara river, measured down the slope, or sixty-six feet measured horizontally from the said high water mark.

“ The plan signed by the parties hereto and filed with this agreement in the department of the Secretary of State for Canada, shows the land, the title to which is confirmed by the Commissioners, which said parcel of land is tinted pink on the plan, and the said parcel of land as to which the said Commissioners have granted an irrevocable and perpetual license is shown upon the said plan tinted green.

“ 2. The Bridge Company hereby grant and convey to the Commissioners for the purposes of a public road or highway, all the lands shown on the said plan as colored yellow, and lying between the westerly limit of the chain reserve and a line drawn from the northerly boundary of the Bridge Company's property parallel with the stone abutment of the Bridge Company, and distant easterly twenty feet therefrom, and inclining from the point opposite the southerly corner of the abutment to a point on Bridge street in line with the said abutment. And in addition the Bridge Company hereby grant and convey whatever right the Bridge Company have in and to the parcel of land formerly owned by John A. Orchard, and conveyed by him to the said company, and forming part of the highway to the north of the lands colored yellow on said plan.

“ 3. And it is agreed between the parties hereto that these presents, or any covenants by any party hereto, hereinafter contained, are not to be construed as expressing or implying any covenants for title or quiet possession.

“ 4. The Commissioners covenant with the Bridge Company that the said lands hereby granted by the Bridge Company to the Commissioners, are to be used for the purpose of a public street, and the said Bridge Company are to have the free use thereof for access to and from the bridge as at present constructed on the level and overhead, or for any bridge that may be hereafter constructed for themselves ; and, also, to and from the bridge at present constructed, or any bridge that may be hereafter constructed, to the lands owned by the said Bridge Company to the west of the said piece of land colored yellow. And the Commissioners also covenant with the said Bridge Company that the said lands shall be used as a public road for the free use of all persons travelling thereon, either in carriages or on foot or otherwise.

“ 5. The said Commissioners covenant that the said Bridge Company shall have the right of crossing the said road or highway and the said lands above described, marked yellow, and also the said lands hereby granted and conveyed to the

Commissioners with a single or double track, electric or cable or other railway, to be moved by any power except steam, to reach the lands of the Bridge Company to the west thereof, and are to have the right to cross on the level the tracks of the Niagara Falls Park and River Railway in such manner and upon such terms as may be agreed upon between the said Bridge Company and the said Niagara Falls Park and River Railway, and subject to the directions which may be approved by the Railway Committee of the Privy Council; and in the event of the Bridge Company failing to make an arrangement with the Niagara Falls Park and River Railway for such crossing, the Bridge Company are to have the right to cross the tracks of the Niagara Falls Park and River Railway in such manner and according to such directions and upon such terms as the Railway Committee of the Privy Council may approve.

"6. It is agreed between the parties hereto, that the Niagara Falls Park and River Railway Company shall have the right to lay a double track, and no more, for their electric railway upon the said highway, it being agreed, however, that the said Niagara Falls Park and River Railway Company shall not place their rails nearer to the present entrance of the Bridge Company than at present, and that any second track which may be placed by the said Niagara Falls Park and River Railway Company shall be laid on the westerly side of the existing track.

"7. It is also hereby agreed between the Commissioners and the Bridge Company, that in the event of the Bridge Company desiring for the purposes of their present structure or for the construction of a new bridge, to alter their piers or abutments as at present placed, the said Bridge Company are to be at liberty to do so, and it is hereby agreed between the parties hereto that the grant of the said lands, marked yellow, and of the other lands by the Bridge Company to the Commissioners, are subject to the right of the Bridge Company to retain their piers or abutments as at present located, and with the privilege to the Bridge Company to alter or change the size of their piers and their location to any other point upon the said parcel of land marked yellow and the other parcel of land hereby granted by the Bridge Company to the Commissioners, subject, however, to allowing free access over the said lands for a public street for all proper purposes, and, also, so as not to interfere with the tracks of the Niagara Falls Park and River Railway as located on the said street.

"8. It is hereby agreed between the parties hereto, that the Bridge Company shall have the right upon the lands granted and licensed to them and marked respectively upon the said plan pink and green, to place any erections or structures that may be necessary for the renewing of their present structure or for the construction of a new bridge on the cantilever or single arch principle or otherwise, and for the necessary offices in connection with the same, the Bridge Company agreeing with the Commissioners, that if, after the construction of the said new work, any portion of the lands colored pink or green upon the said map, may not be necessary in connection with such structure, that such portion of such lands as may be on the bank shall be maintained by the said Bridge Company as an ornamental plot or flower garden.

"9. It is agreed that in the event of such a structure being decided upon for a new bridge as will require guys for its maintenance, that the same may be placed or affixed to portions of the bank belonging to or under the control of the Commissioners; and, also, that the guys to the present structure shall not be interfered with, provided always that the said guys must be so arranged as not to interfere with any low level railway that may be sanctioned by the Commissioners, and that the Bridge Company will from time to time, at the request of

the said Commissioners, so change the location of the said guys outside the lands of the said Bridge Company to such point or structure as the Commissioners may desire, but no change shall be directed as shall endanger the safety of the bridge.

"10. It is agreed that the Bridge Company shall not exercise any powers vested or to be vested by the said Act in such company, in relation to the lands and property vested in the Commissioners, or have any rights in relation to the same other than such as are in this agreement contained, specified and described, or unless as may hereafter be agreed upon between the Commissioners and the Bridge Company.

"And the parties hereto of the third part hereby consent to and approve of the foregoing agreements.

"In witness whereof the parties hereto have hereunto set their corporate seals."

Signed, sealed and delivered in the presence of	(Sgd.) J. W. LANGMUIR, Chairman Q. V. N. F. Park Commissioners.
(Sgd) R. G. COX.	(Sgd.) THOS. R. MERRITT, President Niagara Falls Suspension Bridge Co.
	(Sgd.) EDWARD B. OSLER, President Niagara Falls Park and River Railway Co.

Under the authority of the Act of the Legislature before referred to (57 Vict. chap. 13) the foreshores of the river lying in front of the Park proper, and extending from the highwater mark out to the international boundary line, were vested in the Commissioners by Order in Council of date 6th July, 1894.

Several important and necessary additions to the Park domain were effected during the year. A large part of the territory lying under the high bank of the river, one mile below the whirlpool, and known as "Foster's Flats" had been disposed of by the Crown prior to Confederation. As it was considered desirable for many reasons to extinguish the private rights to these lands, they were acquired by arbitration proceedings; and the title of the Commissioners to all the lands forming the talus, and extending from the Falls northwards to the Military reserve at Queenston, is now complete, with the exception of a very small piece immediately south of the reserve, the title to which was in Sir David Macpherson and is now under the control of the Electric Railway Company. The Commissioners, however, have a chain in width from the water's edge in front of this portion, so that its acquisition is not a matter of very great moment.

The property thus secured, fifty-five and a half acres in all, lying as it does along the shore of the river for about three-eighths of a mile and immediately in front of the wildest portion of the lower rapids, is a very desirable addition to the Park; and in view of the ultimate construction of the low-level railway it will be of great value for a picnic ground and place of public resort. It has long been celebrated for its exceptional wealth of plant life, and to the student of geology its location and structure are of special interest.

The Commissioners have also completed the acquisition of "Wintergreen Point," a bold promontory in the rocky wall of the gorge immediately overlooking "Foster's Flats." This piece of three and a half acres was cut off from the adjoining property by the line of the Electric Railway and enclosed by it and the Chain Reserve along the top of the bank. When cleared up and put in order it will prove a delightful prospect point from which to survey the surrounding scenery and mark the devious course of the great river.

In order to straighten the driveway in front of a portion of the town, it was found desirable to acquire a narrow strip on the west side of the Chain Reserve. This affords a proper width at a point where physical obstacles necessitated the construction of the electrical railway farther from the edge of the cliff than at other places and saves a double crossing of the tracks by traffic vehicles.

Authority having been obtained at the last session of the Legislature, an additional issue of debentures to the extent of \$75,000 was made during the year. The new issue was made subject to the \$525,000 issued in 1887, matures at the same time, viz., 1927, and bears the same rate of interest, that is, four per cent. The price obtained was $102\frac{57}{100}$, as compared with $101\frac{84}{100}$ obtained in 1887. The proceeds enabled the Commissioners to wipe out the balance due to the Imperial Bank, pay for the lands acquired, make some urgently needed improvements to the property, provide for the debenture interest, carry on the usual works of maintenance and close the year with a balance to the good.

As was noted in last year's report the rental payable by the Canadian Niagara Power Company under the terms of their agreement of 7th April, 1892, will begin this year. The \$25,000 to be received from this source, together with the other fixed revenues, will amply provide for all the ordinary expenditure in connection with the Park and leave a reasonable sum available for permanent improvement to the property.

Application having been made by the Niagara Falls Park and River Railway Company for permission to erect an incline north of the Maid-of-the-Mist Ferry Landing, in accordance with the terms of the agreement of 4th December, 1891, very careful examination was made of the ground by the Commissioners in order to secure a site for the incline and the buildings in connection therewith which would not interfere with the views from the approaches to the Park to a greater degree than was absolutely necessary. A site for the building at the top was finally determined on, which fills the precise field of view previously occupied by a mixed clump of scraggy red cedars and sumacs. The design and finish of the building, as erected, are most artistic and ornate; and the construction of the incline is of the most substantial and complete description. The motive power used is electricity.

Plans showing the general design of the works proposed to be undertaken in the Park by the Canadian Niagara Power Company were submitted for the approval of the Commissioners, as required by the terms of their agreement of April 7th, 1892. In view of the magnitude of the interests involved the Government, at the request of the Chairman, appointed Sir Casimir Gzowski, K. C.M.G., a special commissioner to assist the Commissioners in passing upon the plans of the projected works, and more particularly with respect to the engineering features of the plans submitted. After a full consideration of the three several and distinct systems of development submitted by the Power Company, approval was given with the consent of the Government, to one of the systems proposed, which would conserve the scenic features of the Park to the fullest extent and put the bulk of the works underground. A modified approval was also given to one of the alternative systems which, it was claimed, was specially

designed to obviate some of the most serious difficulties apprehended from running ice and frazil in the winter season. In this latter system nearly the whole of the works would be underground. The officials of the Company anticipate an early commencement of the work.

Early in the season it was found that substantial protection works along the main shore of the river behind the Dufferin Islands were absolutely necessary in order to save the beautifully wooded banks from being irreparably injured by the erosive action of the river, and a considerable expenditure was incurred in this work. About 800 feet in length out of a total of 2,050 feet has been constructed and the balance will require to be taken in hand early this year. This work will, when completed, form a nicely shaded promenade around the whole reach of the river from Clark Hill to the Dufferin Gate, and add very much to the attractiveness of this portion of the Park.

The picnic grounds were greatly improved and enlarged early in the spring, and a large rustic pavilion was erected with a very comprehensive system of hot and cold water supply devised in connection with it for the convenience of the excursion travel. The number of excursionists visiting the Park has been greatly increased by the conveniences afforded by the Electric Railway, and the opening of the River Line to Buffalo will doubtless greatly augment the numbers when the attractions of the route become better known. A neat and commodious rustic shelter has been built at Inspiration Point, and this very delightful vantage ground from which to view the panorama of the Falls is now well equipped for the use of the public. A number of other improvements in the Park domain were undertaken which will be found more particularly described in the report of the Superintendent appended hereto.

The receipts and expenditures for the year ending December 31st, 1894, are herewith submitted, the details of which will be found in the tabulated statement attached to the Superintendent's report.

RECEIPTS.

From rentals of photo, elevator and refreshment privileges.....	\$ 8,200 00
Niagara Falls Park and River Railway.....	10,000 00
Island tolls on carriages.....	1,483 75
Sundry sales, etc., etc.....	349 94
Imperial Bank, interest on deposits	412 89
Net proceeds of sale of debentures	77,285 93
	<hr/>
	\$97,732 51

EXPENDITURES.

Permanent works on Capital Account:

Paid Imperial Bank, amount of overdraft, December, 1893.....	\$35,721 90
Cribwork, protection and other works of permanent improvement in the Park..	\$7,002 66
On account of metalling, etc., the river driveway in front of the town.....	3,445 70
For lands acquired at Foster's Flats, etc..	6,244 63
Legal and arbitration expenses	1,313 90
Sundry small items	234 00
	<hr/>
	18,240 89

EXPENDITURES.—*Continued.*

Maintenance charges :

Salaries and wages, including wages of laborers	\$10,791 20	
Materials, etc	1,595 57	
Office expenses	257 55	
Commissioners' travelling expenses	296 54	
Miscellaneous	331 71	
	<hr/>	13,272 57
Coupon interest on debentures and charges	22,565 46	
Interest on bank overdraft	1,468 25	
Balance on deposit Imperial Bank, December 31st, 1894	6,463 44	
	<hr/>	<hr/>
		\$97,732 51

All of which is respectfully submitted.

J. H. LANGMUIR,
Chairman.
JOHN A. ORCHARD.
GEORGE H. WILKES.

QUEEN VICTORIA NIAGARA FALLS PARK.

ANNUAL REPORT OF THE SUPERINTENDENT FOR THE YEAR 1894.

To the Commissioners of the Queen Victoria Niagara Falls Park :

GENTLEMEN,—I beg to submit my report for the year ending 31st December, 1894.

The winter of 1893-4 was a comparatively mild one in the Niagara peninsula, and consequently we were not troubled as much as usual with ice or frozen spray in those portions of the Park exposed to damage from this cause. An ice bridge formed in the gorge on the 11th February and remained firm for over six weeks, finally breaking away on the 7th April. The beautiful and fantastically disposed tasselled draperies of frozen spray, referred to in last year's report, were again developed in wonderful profusion on the face of the cliff near Table Rock and proved very attractive to visitors.

Skating Rinks.—Efforts were made to afford as much enjoyment as possible to winter visitors, and the ice which formed on the ponds near the principle entrance to the Park was kept clear of snow and in good condition for skating. The opportunity thus afforded for the enjoyment of this exhilarating exercise in the open air, which cannot be secured elsewhere with safety in the immediate vicinity of the Falls, was eagerly embraced by large numbers of citizens from the town, village and adjacent rural districts, and, also, by many persons from the American side. This is the most conveniently located of the available water spaces in the Park for skating purposes ; but as the water supply to the ponds is wholly from springs it does not freeze as quickly nor keep firm and safe as long as river water. An attempt was made to form a rink on the reach of smooth water behind Cedar Island, but owing to the prevalence of spray at this locality it is very difficult to maintain a proper surface on the ice for any length of time. The lower ponds, however, are spacious, well protected by the high wooded bluff on the west, and are under the supervision of the Constable in charge of the "Mowat Gate," and will answer for the present. When the works necessary to convert the gravel pit into an ornamental lake are completed, a large rink may be there formed, but it will not be as convenient of access to the general public.

Improved Facilities for Visitors.—The early spring enabled out-door work to be begun betimes in the Park, and the grounds were brought into good shape and maintained in that condition throughout the season. The greatly augmented excursion travel of 1893, resulting from the opening up of the Electric Railway and the consequent facility with which large masses of people reach the Park from Toronto and other large centres, demonstrated the necessity for greatly increased provision being made for their accommodation. After carefully studying the question it was determined to enlarge the picnic grounds by changing the roadway leading into the Park from the western entrance on Murray Street, and by swinging it around to the north in a bold sweep, add the old roadbed and a large piece of meadow land beyond it to the area already set apart for this purpose. This land was therefore drained, graded and sown quite early in the season ; and a number of large foliage trees transplanted from elsewhere in order to afford shade, and the whole made ready for the rush of excursionists in July. The old dwelling house which stood on the south side of the original line of road was torn down and a lofty pavilion of cedar work and elm bark erected upon its

foundations, and gravel paths constructed, which lead to it from various directions. As this is a convenient point and near enough to answer as a centre for the picnic grounds, the lower part was arranged to contain the hot water apparatus. Many of the excursions coming to the Park are composed of several Sunday Schools and their friends. Others are large manufacturing or mercantile aggregations of employees. These usually supply their own provisions, and desire only facilities for making tea and coffee without expense. As some of these combinations number from ten to eleven thousand, it is apparent that a stove and tea kettle are not sufficient to meet their requirements, especially as they all usually want to enjoy refreshments immediately on arrival. A series of three upright boilers of 120 gallons capacity was, therefore, installed and connected by suitable piping to heating coils fixed in a large sized wood range capable of burning the limbs of trees and refuse timber of any kind. From these boilers supply is had to taps conveniently placed for access by which an abundant supply of hot water, at the boiling point, is furnished *free* to all. Cold water is also supplied *ad libitum*, both from the river and from springs. The apparatus for boiling the water is concealed underneath the floor of the pavilion and is in charge of a competent official. The closet conveniences which had been provided in connection with the large waiting room at the rear of the restaurant building were found to be inadequate and were much enlarged and improved. A matron was placed in charge of the ladies toilet to afford information and to keep the rooms clean and tidy.

New Shelters.—At “Inspiration Point,” a select spot on the edge of the high bank of the river, from which choice views of the falls and gorge are obtained, the platform was enlarged and a spacious open rustic shelter erected for the accommodation of appreciative visitors. The design of the structure is cruciform in plan with high lantern storied octagonal terminals at either extremity of the long arms. Ornamental seats of rustic work form part of the design, and it is intended to have ornamental and flowering creepers of various kinds over the structure in the spring. The under side of the roof has yet to be ceiled with white cedar bark. The character of the building has been highly commended, and when the work is fully completed the *tout ensemble* will, without doubt, form an attractive feature to the landscape.

Driveways Widened.—At the driveway turnouts near “Inspiration Point” and “Rambler’s Rest,” the roadways have been widened to permit of two carriages passing freely, and wide cut stone curbings substituted for the narrow ones previously used.

Stone Curbing Extension.—At Table Rock the dressed stone curbings were extended in either direction and the roadway graded to correspond with the levels of the same.

Improvements at Sumac Island.—The old wooden carding mill at Sumac Island which has long been one of the ancient landmarks of the district, but whose timbers were found to be in a very decayed condition, was pulled down, and only so much of the foundation of the structure left as would protect the pump supplying Clark Hill with water, a right which is reserved for that purpose in perpetuity by the deed of the property from Mr. Sutherland Macklem. The ground occupied by the site of the building was levelled and graded and covered with good soil which will be planted next spring with suitable trees and shrubs.

On the river side of the old mill and immediately in front of the wildest portion of the “White Horse Rapids,” a broad foot bridge has been constructed, leading the main pathway by the very edge of the madly rushing water. The stringers of this bridge are of round unbarked white pine and rest upon rustic

piers of cedar work. The railings are also of cedar wrought out in design, and the whole forms a pleasant feature of the landscape. The bridge affords visitors an unrivalled view of the rapids and cannot but be much appreciated by them. A rustic arbor will be erected here in the spring.

Shore Protection.—In my report of last year attention was drawn to the necessity for immediate action in providing protection works around the base of the high bank of the river opposite the Dufferin Islands. For the whole length of this reach of the river the stream is very swift, and as the outline of the shore is convex the force of the current is exercised in cutting into the bank where it is not protected. Many years ago a light timber work projection appears to have extended around the whole of the distance, but it has been undermined and carried away from time to time until now only about one hundred feet in all remains, and of this not one-half is of any practical use.

Early in the spring it became apparent that prompt action would be required to save large spaces of the nicely wooded side slopes from ruin, and work was begun at the two most accessible points and pushed forward as rapidly as possible. In the reconstruction of this protection it was decided that provision be made for a promenade being carried along the whole of the distance and the beautiful "Riverside Ramble" extended to Dufferin Gate. Heavy cribwork has been constructed for a distance of 600 feet down stream from the Dufferin Gate, and a short distance farther on another reach of 200 feet was built, covering two of the points where great slides in the bank took place years ago, and where further damage was imminent. The remaining portions of the unprotected bank, some 1,250 feet in all, will require to be taken in hand in the spring. This work is somewhat costly as the large quantity of stone required for loading the cribs and filling in behind them to stiffen the toe of the bank has to be brought some distance. When completed, however, the work will for many years amply protect the shore from further damage, and provide a delightful addition to the fascinating promenades of this portion of the Park.

Where the "White Horse Rapids" lash the shore of Sumac Island the old cribwork, which had been loaded with small stones only, had gone to pieces, and year by year the shore of the island and of the mainland immediately below were being eroded by the tremendous wash from the rapids. The bottom was carefully cleaned and boulders and substantial cribwork protection was placed in front of the island and carried a few feet below it. An extension of about 100 feet will be required in the spring in order to complete this work and direct the sweep of the current off from the shore.

New Trees and Shrubs.—A small but carefully selected stock of young ornamental trees and shrubs, not now found in the Park, was obtained from the most reliable nurserymen and put in the Park nursery to develop. Many of them are now fit for transplanting, and doubtless we will obtain good results from this source the coming year. We have also a large stock of very fine cuttings of shrubbery of various kinds of two or three years' growth, which will be available for the year's planting out and will help much to fill the bare spots.

A complete collection of specimens of all the different kinds of trees and shrubs which will grow in this climate should be obtained for the Park at the earliest possible date, and if it be at all practicable a substantial effort should be made in this direction the ensuing year. Of necessity the stock which we may be able to obtain of these specimen trees will require years to develop, and the sooner a beginning on a comprehensive scale is made the sooner will the Park afford that measure of instruction and delight to the student of botany and to the average visitor as well which its exceptionally favorable location and climatic conditions warrant.

Flower Garden.—The flower garden in front of the picnic grounds was, as usual, well kept and furnished with a nice display of annuals. This little plot brightens up the place very much, and is a source of great pleasure to visitors owing to the perfection to which the flowers develop under their nightly bath of spray. In enlarging the grounds provision has not been made for extending the flower beds, it being considered more desirable to ornament with hardy herbageous plants which, when once planted, will last forever.

New Pathway.—A new gravelled walk was constructed to the west of the electric railway tracks from the restaurant to Table Rock House, and a series of beds made in the margin in which we hope to try rhododendrons and other choice highly flowering plants. In order to afford better facilities for planting out our flower beds in the early summer a small greenhouse has been erected near the gardener's residence, and, through the courtesy of several gentlemen, a good beginning has been made in providing stock for this purpose at small outlay.

Double Track for Electric Railway.—The doubling of the track of the electric railway through the Park of course required some few changes in the grounds and the transplanting of some of our shrubbery. The effect of the two tracks has not, however, been detrimental to the scenery, the strip of lawn between the tracks and the uniformly spread and finely broken layer of macadam covering the ties and reducing the obtrusiveness of the railway to a minimum. The works to be performed by the railway company under the specifications furnished them have not been fully completed yet.

The gravel pit has had the sides nicely sloped and a water pipe of sufficient dimensions to keep it filled with water at all times laid from the river so as to ensure a supply by gravitation. An attractive feature will be made of this hitherto unsightly excavation by forming an ornamental pond with islands for the culture of aquatic plants of various descriptions and possibly other forms of life as well.

Macadamizing River Road.—Outside the Park proper a large expenditure was incurred in connection with the roadway leading along the river bank in front of the town. This roadway has long been in a very bad condition, no repairs of consequence having been made to it since it was acquired in 1887, and was then considered out of order. In granting permission to the Electric Railway Company to double track the line, of necessity, the roadway had to be taken into account, as in many places the travelled portion was interfered with by the laying of the second track. Under the specifications governing the work the Railway Company were required to grade a roadway 18 feet wide to a level with the railway for the whole distance of 2 2-10 miles occupied by the roadway, and to properly macadamize one-half of this distance, the remaining half to be macadamized by the Park. Under an arrangement made with the town authorities, part of the cost of the work to be done by the Park was to be borne by the town. The whole of the roadway including the footpath has now been put in good order, with the exception of the stoning of a small piece at the north end of the town between Muddy Run and the Whirlpool over which there is but little travel. The macadamizing of this piece will be completed when the town authorities implement their agreement and pay the one thousand dollars promised.

Outlying Territory.—North of the town along the chain reserve and talus which extend to Queenston, very little work has been done. The dead wood along the edge of the high bank, which looked unsightly from the cars of the electric railway, was all cut down and cleared away, and a little cleaning up done at Wintergreen Point. A very great improvement could be made to this long reach of territory by judicious planting between the railway and the cliff at certain

points, of low flowering shrubbery that would brighten up the field of view, and by the setting out on the landward side where the soil will admit of it, of some good indigenous trees, such as the flowering dogwoods and soft maples.

Flora of the Park.—During the year the Park gardener, Mr. Roderick Cameron, has been assiduous in his efforts to complete the collection of the flora found growing without cultivation within the Park domain. Notwithstanding that the lichens and some other families have not been taken in hand, we have now considerably over nine hundred distinct species, embracing 105 families and 147 genera collected, mounted and catalogued as the result of his zeal and intelligence. The collection is very highly praised by Professor John Macoun, the chief botanist attached to the Geological Survey of Canada, who has studied the botany of this particular field for over thirty-five years, and by other eminent authorities in Canada and the United States. Prof. Macoun has very kindly verified the identity of every one of these specimens, so that we are not in doubt as to the correctness of the names and families catalogued.

Many of the species are very rare and some of them had not previously been found elsewhere in the Dominion. The collection is on view in the Superintendent's office in the Park, where it may be seen at any time by students of botany or others interested in this delightful science.

The catalogue of plants will be found attached hereto. I would strongly recommend that 500 copies of this catalogue be issued in separate form for the use of high school pupils, and others who take an interest in botany.

Fatal Accident in the Park.—A serious accident occurred in the Park on the 15th September. An elderly lady from New Jersey, who came to view the Falls accompanied by her niece, having spent the day in the Park, was left alone for a few minutes in the pavilion at Inspiration Point. As she was very deaf she was cautioned by her friends to remain there until their return. For some reason, however, she sauntered across the tracks of the electric railway and was run down and killed. Her relative, who was an eye witness of the shocking affair, attributed it entirely to the unfortunate lack of hearing on the part of the old lady and exonerated the railway officials from all blame.

Notwithstanding the very large numbers of visitors carried by the electric railway to and from the Park during the year, no other accident has been recorded, a fact which reflects credit upon its careful management.

Visitors.—The number of visitors to the Park in 1894 shows a very considerable falling off from last year, the totals for the two past years being for

The year 1893.....	543,924
“ 1894.....	442,828

It may, however, be noted that the figures for 1894 are higher than those recorded for any year previous to 1893 by 170,343. From the following tabulated statement it will appear that the greatest falling off in visitors was in respect to that class locally termed *tourist* travel or such as usually enter the Park in carriages. This class was in 1893 unusually large owing, doubtless, to the attractions of the World's Fair at Chicago, and in 1894 it was much limited in conse-

quence of the widespread and general depression, and stringency in business and financial matters. A comparison of figures for these years gives the following results:

	1893.	1894.
Number of carriages entering the Park	65,921	34,741
“ visitors in carriages	256,724	125,415
“ “ by electric railway (approximate)	146,014	209,675
“ pedestrians	141,186	107,738
Totals for each year	543,924	442,828

The accompanying statement gives the attendance more in detail for each month during the year 1894:

1894.	Number of carriages entering the Park.	Number of visitors in carriages.	Number of visitors by electric railway. (Approximate.)	Number of pedestrians.	Total.
January	749	2,098	1,021	3,631	6,750
February	1,671	5,751	1,375	2,641	9,767
March	966	2,694	1,754	2,591	7,039
April	1,449	4,374	1,830	6,338	12,542
May	2,012	6,736	2,525	9,383	18,644
June	3,177	11,129	12,110	10,469	33,708
July	5,607	22,509	57,336	21,699	101,544
August	7,600	30,488	82,772	28,877	142,137
September	5,342	20,514	36,282	11,607	68,403
October	2,947	9,729	8,215	6,215	24,159
November	1,591	5,167	2,575	2,544	10,286
December	1,360	4,226	1,880	1,743	7,849
Totals	34,471	125,415	209,675	107,738	442,828

Good Order Maintained.—Notwithstanding the large number of visitors in midsummer, good order was maintained throughout, and, although on several occasions gangs of professional crooks followed the excursions to the Park yet,

owing to the vigilance of the Park constables, aided by Chief Young of the Ontario police force and some members of his staff, no depredations worth noting were committed.

Year by year the attractions and accommodations which the Park affords to visitors are becoming better known to our people throughout the Province, and with the excellent facilities which the electric railway with its double track now affords the public in reaching it, there is every reason to expect that the public will learn to appreciate its advantages.

The receipts for the year are indicated in detail in the following tabulated statement.

All which is respectfully submitted.

JAMES WILSON,
Superintendent.

NIAGARA FALLS,
20th February, 1895.

1894.	Tolls over islands.	Rentals of privileges.	Sundries.	Interest on bank deposits.	Total.
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
January	8 50	2,050 00	52 00		2,110 50
February	11 75		8 00		19 75
March	47 00		22 70		69 70
April	21 25	4,550 00			4,571 25
May	84 25		4 00	256 47	344 72
June	211 00	2,500 00	36 35		2,747 35
July	238 25	2,050 00			2,288 25
August	367 25				367 25
September	259 75				259 75
October	168 25	4,550 00			4,718 25
November	35 50		226 89	156 42	418 81
December	31 00	2,500 00			2,531 00
Total	1,483 75	18,200 00	349 94	412 89	20,446 58

JAMES WILSON,
Superintendent.

QUEEN VICTORIA NIAGARA FALLS PARK.

CATALOGUE OF PLANTS

WHICH HAVE BEEN FOUND GROWING WITHOUT
CULTIVATION IN THE

PARK AND ITS OUTLYING TERRITORIES.

COLLECTED, MOUNTED AND CATALOGUED FOR THE PARK HERBARIUM
IN THE SUPERINTENDENT'S OFFICE

BY
RODERICK CAMERON,
Chief Gardener.

APPENDIX

TO THE REPORT OF THE SUPERINTENDENT OF THE PARK FOR THE YEAR

1894.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.



TORONTO:

WARWICK BROS. & RUTTER, PRINTERS, &C., 68 AND 70 FRONT STREET WEST.
1895.



QUEEN VICTORIA NIAGARA FALLS PARK.

JAMES WILSON, ESQ.,

Superintendent.

DEAR SIR,—Acting under your instructions I have, at odd moments during the past four years, collected a large number of specimens of the better known plants found growing without cultivation in the Park; and have mounted and catalogued them for convenience of reference.

So far 105 families, comprising 417 genera and 915 species, have been found; and I have no doubt that many others will yet be discovered. As you desired to have the catalogue embrace only such plants as have been mounted and are on evidence in the Herbarium, I have not included any of the many other species not found by me but which have been noted by visiting botanists from time to time in the immediate vicinity of the Park.

I have to thank Professor John Macoun, the eminent Chief Botanist of the Geological Survey of Canada for verifying the names of the several species and for many acts of courtesy and words of encouragement.

The lichens and other families have not yet been taken in hand for want of time. These will add a considerable number of species to the number above noted.

The whole respectfully submitted.

RODERICK CAMERON,

Gardener.

NAMES OF THE NATURAL FAMILIES OF PLANTS.

Order.	No. of genera.	No. of species.
1 Ranunculaceæ	10	22
2 Magnoliaceæ	2	3
3 Anonaceæ	1	1
4 Menispermaceæ	1	1
5 Berberidaceæ	3	3
6 Nymphæaceæ	1	2
7 Sarraceniaceæ	1	1
8 Papaveraceæ	3	3
9 Fumariaceæ	1	2
10 Cruciferae	15	30
11 Capparidaceæ	1	1
13 Cistaceæ	1	1
14 Violaceæ	2	13
15 Caryophyllaceæ	8	16
16 Portulacaceæ	2	3
18 Hypericaceæ	2	7
20 Malvaceæ	3	4
21 Tiliaceæ	1	2
22 Linaceæ	1	1
23 Geraniaceæ	3	6
24 Rutaceæ	2	3
25 Illicineæ	1	1
26 Celastraceæ	2	3
27 Rhamnaceæ	1	1
28 Vitaceæ	2	3
29 Sapindaceæ	4	6
30 Anacardiaceæ	1	5
31 Polygalaceæ	1	3
32 Leguminosæ	13	32
33 Rosaceæ	13	46
35 Saxifragaceæ	6	12
36 Crassulaceæ	2	3
38 Hamamelaceæ	1	1
39 Haloragææ	1	2
41 Lythraceæ	2	2
42 Onagraceæ	5	11

Family.

Ficoideæ	1	1
48 Umbelliferæ	14	18
49 Araliaceæ	1	5
50 Cornaceæ	2	9
51 Caprifoliaceæ	6	19
52 Rubiaceæ	4	14
54 Dipsacææ	1	1
55 Compositæ	40	87

Order.	No. of genera.	No. of species.
56 Lobeliaceæ	1	4
57 Campanulaceæ	2	6
58 Ericaceæ	10	19
61 Primulaceæ	3	7
65 Oleaceæ	3	6
66 Apocynaceæ	1	2
67 Asclepiadaceæ	2	6
69 Gentianaceæ	2	3
70 Polemoniaceæ	2	2
71 Hydrophyllaceæ	1	2
72 Borraginaceæ	6	11
73 Convolvulaceæ	2	3
74 Solanaceæ	4	8
75 Scrophulariaceæ	14	28
76 Orobanchaceæ	3	3
77 Lentibulaceæ	1	2
78 Bignoniaceæ	1	1
80 Acanthaceæ	1	1
81 Verbenaceæ	2	3
82 Labiatae	16	24
83 Plantaginaceæ	1	2
86 Amarantaceæ	1	2
87 Chenopodiaceæ	3	6
88 Phytolaccaceæ	1	1
89 Polygonaceæ	3	16
91 Aristolochiaceæ	1	1
92 Piperaceæ	1	1
93 Lauraceæ	2	2
94 Thymeleaceæ	1	1
95 Elæagnaceæ	1	1
97 Santalaceæ	1	1
98 Euphorbiaceæ	2	3
99 Urticaceæ	8	9
100 Plantanaceæ	1	1
101 Juglandaceæ	2	5
103 Cupuliferæ	6	14
104 Salicaceæ	2	9
106 Ceratophyllaceæ	1	1
107 Coniferæ	6	10
108 Hydrocharidaceæ	3	3
110 Orchidaceæ	10	20
113 Iridaceæ	2	2
114 Amaryllidaceæ	1	1
115 Dioscoreaceæ	1	1
116 Liliaceæ	11	25
117 Pontederiaceæ	2	2
121 Juncaceæ	2	12
122 Typhaceæ	2	4
123 Araceæ	2	2
125 Alismaceæ	3	6
126 Naiadaceæ	2	10
128 Cyperaceæ	6	50

Order.	No. of genera.	No. of species.
129 Gramineæ	26	45
130 Equisetaceæ	1	7
131 Filices	15	42
132 Ophioglossaceæ
133 Lycopodiaceæ	1	2
134 Selaginellaceæ	1	1

Hepaticæ	1	5
Musci	18	36
Lichenes		20

Order 1. RANUNCULACEÆ.—Crowfoot Family.

CLEMATIS.

Clematis Virginiana Virgin's Bower.

ANEMONE.

Anemone cylindrica Long-fruited Anemone.
 Anemone parviflora Small-flowered Anemone.
 Anemone nemorosa Wood Anemone or Wind-flower.

HEPATICA —Liver Leaf.

Hepatica triloba Round-lobed Hepatica.
 Hepatica acutiloba Sharp-lobed Hepatica.

THALICTRUM.—Meadow Rue.

Thalictrum anemonoides Rue Anemone.
 Thalictrum polygamum Meadow Rue.
 Thalictrum dioicum Early Meadow Rue.

RANUNCULUS.—Crowfoot, Buttercup.

Ranunculus aquatilis var trichophyllus . . Water Crowfoot.
 Ranunculus sceleratus Cursed Crowfoot.
 Ranunculus recurvatus Hooked Crowfoot.
 Ranunculus Pennsylvanicus Bristly Crowfoot.
 Ranunculus fascicularis Early Crowfoot.
 Ranunculus repens Creeping Crowfoot.
 Ranunculus acris Buttercup Crowfoot.

CALTHA.—Marsh Marigold.

Caltha palustris Marsh marigold.

COPTIS.—Gold Thread.

Coptis trifolia Three-leaved Gold thread.

AQUILEGIA.—Columbine.

Aquilegia Canadensis Wild Columbine

ACTÆA.—Baneberry.

- Actæa spicata* var *rubra*.....Red Baneberry.
Actæa albaWhite Baneberry.

CIMICIFUGA.—Bugbane.

- Cimicifuga racemosa*Black Snakeroot.

Order 2. MAGNOLIACEÆ.—Magnolia Family.

MAGNOLIA.

- Magnolia acuminata*Cucumber Tree.
Magnolia umbrellæUmbrella Tree.

LIRIODENDRON.

- Liriodendron tulipifera*Tulip tree.

Order 3. ANONACEÆ.—Custard Apple Family

ASIMINA.

- Asimina triloba*Papaw tree.

Order 4. MENISPERMACEÆ.—Moonseed Family.

MENISPERMUM.

- Menispermum Canadense*Moonseed.

Order 5. BERBERIDACEÆ.—Barberry Family.

BERBERIS.

- Berberis vulgaris*.....Common barberry.

CAULOPHYLLUM.

- Caulophyllum thalictroides*Blue cohosh or Pappoose-root.

PODOPHYLLUM.

- Podophyllum peltatum*May apple.

Order 6. NYMPHÆACEÆ.—Water Lily Family.

NYMPHÆA.

- Nymphæa odorata*White water lily.
Nuphar advenaYellow water lily.

Order 7. SARRACENIACEÆ.—Pitcher Plant Family.

SARRACENIA.

- Sarracenia purpurea*Side saddle flower.

Order 8. PAPAVERACEÆ.—Poppy Family.

PAPAVER.

Papaver somniferum Common poppy.

CHELIDONIUM.

Chelidonium majus Celandine.

SANGUINARIA.

Sanguinaria Canadensis Bloodroot.

Order 9. FUMARIACEÆ.—Fumitory Family.

DICENTRA.

Dicentra Cucullaria Dutchman's breeches.

Dicentra Canadensis Squirrel corn.

Order 10. CRUCIFERÆ.—Mustard Family.

NASTURTIIUM.

Nasturtium officinale True water cress.

Nasturtium palustre Marsh cress.

Nasturtium palustre var *hispidum* Marsh cress.

Nasturtium Arimoracia Horse radish.

HESPERIS.—Rocket.

Hesperis matronalis Dame's Violet.

DENTARIA.—Toothwort.

Dentaria diphylla Toothwort pepper root.

Dentaria laciniata Toothwort pepper root.

LUNARIA.—Satin Flower.

Lunaria biennis Honesty.

CARDAMINE.—Bitter Cress.

Cardamine rhomboidea Spring cress.

Cardamine rhomboidea var *purpurea* .. Spring cress.

Cardamine hirsuta Small bitter cress.

ARABIS.—Rock Cress.

Arabis lyrata Rock cress.

Arabis confinis Rock cress.

Arabis hirsuta Rock cress.

Arabis lævigata Rock cress.

Arabis Canadensis Sickie pod.

Arabis perfoliata Tower mustard.

 BARBAREA.—Winter Cress.

- Barbarea vulgarisCommon winter cress.
 Barbarea vulgaris var stricta.....Common winter cress.

ERYSIMUM.—Treacle Mustard.

- Erysimum cheiranthoidesWorm seed mustard.

SISYMBRIUM.

- Sisymbrium officinale.....Hedge mustard.

BRASSICA.

- Brassica sinapistrum or sinapis arvensis..English charlock.
 Brassica (or sinapis) nigra.....Black mustard.
 Brassica rapaTurnip.

ALYSSUM.

- Alyssum calycinum.....Yellow alyssum.

CAMELINA.

- Camelina sativaFalse flax.

CAPSELLA.

- Capsella Bursa-pastorisShepherd's purse.

LEPIDIUM.—Pepperwort.

- Lepidium intermediumWild pepper grass.
 Lepidium campestrePepperwort pepper grass.

CAKILE.

- Cakile AmericanaAmerican sea rocket.

Order 11. CAPPARIDACEÆ.—Caper Family.

POLANISIA.

- Polanisia graveolensPolanisia.

Order 13. CISTACEÆ.—Rock Rose Family.

- Helianthemum CanadenseFrost weed.

Order 14. VIOLACEÆ.—Violet Family.

- Solea concolorGreen violet.

 VIOLA.—Heart's-ease.

<i>Viola rotundifolia</i>	Round-leaved violet.
<i>Viola lanceolata</i>	Lance-leaved violet.
<i>Viola blanda</i>	Sweet white violet.
<i>Viola odorata</i>	Sweet or English violet.
<i>Viola palustris</i>	Marsh violet.
<i>Viola palmata</i> var <i>cucullata</i>	Common blue violet.
<i>Viola canina</i> var <i>sylvestris</i>	Dog violet.
<i>Viola rostrata</i>	Long-spurred violet.
<i>Viola Canadensis</i>	Canada violet.
<i>Viola pubescens</i>	Downy yellow violet.
<i>Viola eriocephalus</i>	
<i>Viola tricolor</i>	Pansy or heartsease.

Order 15. CARYOPHYLLACEÆ.—Pink Family.

DIANTHUS.—Carnation.

<i>Dianthus Armeria</i>	Deptford pink.
-------------------------------	----------------

SAPONARIA.—Soapwort.

<i>Saponaria officinalis</i>	Bouncing Bet.
------------------------------------	---------------

SILENE.

<i>Silene antirrhina</i>	Sleepy catchfly.
--------------------------------	------------------

LYCHNIS.—Cockle.

<i>Lychnis vespertina</i>	Evening lychnis.
<i>Lychnis Githago</i>	Corn cockle.
<i>Lychnis diurna</i>	Ragged Robin.

ARENARIA.—Sandwort.

<i>Arenaria serpyllifolia</i>	Thyme leaved sandwort.
<i>Arenaria lateriflora</i>	Sandwort.

STELLARIA.

<i>Stellaria media</i>	Common chickweed.
<i>Stellaria longifolia</i>	Long-leaved stitchwort.
<i>Stellaria longipes</i>	Long-stalked stitchwort.

CERASTIUM.

<i>Cerastium vulgatum</i>	Mouse-ear chickweed.
<i>Cerastium viscosum</i>	Larger mouse-ear chickweed.
<i>Cerastium nutans</i>	Annual chickweed.
<i>Cerastium arvense</i>	Field chickweed.

Order 16. PORTULACACEÆ.—Purslane Family.

<i>Portulaca oleracea</i>	Common purslane.
---------------------------------	------------------

CLAYTONIA.

- Claytonia Virginica Narrow-leaved spring beauty.
 Claytonia Caroliniana Broad-leaved spring beauty

Order 18. HYPERICACEÆ.—St. John's Wort Family.

- Hypericum Kalmianum Kalm's St. John's wort.
 Hypericum perforatum Common St. John's wort.
 Hypericum mutilum Hypericum.
 Hypericum maculatum Hypericum, Corymbed
 Hypericum Canadense Hypericum.
 Hypericum Canadense var majus Hypericum.

ELODES.

- Elodes Virginica Marsh St. John's wort.

Order 20. MALVACEÆ.—Mallow Family.

- Malva rotundifolia Common mallow.
 Malva moschata Musk mallow.

ABUTILON.—Indian Mallow.

- Abutilon Avicennæ Velvet leaf.

HIBISCUS.—Rose Mallow.

- Hibiscus Trionum Bladder ketmia.

Order 21. TILIACEÆ.—Linden Family.

- Tilia Americana Basswood.
 Tilia Europæa European linden.

Order 22. LINACEÆ.—Flax Family.

- Linum usitatissimum Common flax.

Order 23. GERANIACEÆ.—Geranium Family.

- Geranium maculatum Wild cranesbill.
 Geranium pusillum Small flowered cranesbill.
 Geranium Robertianum Herb Robert.

IMPATIENS.—Balsam Jewel Weed.

- Impatiens pallida Pale touch-me-not.
 Impatiens fulva Spotted touch-me-not.

OXALIS.—Wood Sorrel.

- Oxalis stricta Yellow wood sorrel.

Order 24. RUTACEÆ.—Rue Family.

ZANTHOXYLUM.

Zanthoxylum Americanum Prickly ash.

PTELEA.—Shrubby Trefoil.

Ptelea trifoliata Hop tree.

Ailanthus glandulosus Tree of Heaven.

Order 25. ILICINÆ.—Holly Family.

ILEX.

Ilex verticillata Black alder winterberry.

Order 26. CELASTRACEÆ.—Staff Tree Family.

CELASTRUS.

Celastrus scandens Wax work or climbing bitter sweet.

EUONYMUS.

Euonymus atropurpureus Strawberry tree.

Euonymus obovatus Trailing euonymus.

Order 27. RHAMNACEÆ.—Buckthorn Family.

CEANOTHUS.

Ceanothus Americanus New Jersey tea.

Order 28. VITACEÆ.—Vine Family.

VITIS.—Grape.

Vitis æstivalis Summer grape.

Vitis riparia Frost grape.

AMPELOPSIS.—Virginian Creeper.

Ampelopsis quinquefolia Virginian creeper.

Order 29. SAPINDACEÆ.—Soapberry Family.

STAPHYLEA.

Staphylea trifolia American bladder nut.

ÆSCULUS.

Æsculus Hippocastanum Common horse-chestnut.

ACER.—Maple.

Acer spicatum Mountain maple.

Acer saccharinum Sugar or rock maple.

Acer dasycarpum White or rock maple.

Acer rubrum Red or soft maple.

NEGUNDO.—Ash Leaved Maple or box-elder.

Negundo aceroides Box elder.

Order 30. ANACARDIACEÆ.—Cashew Family.

RHUS.—Sumach.

- Rhus typhina* Stag horn sumach.
Rhus venenata Poison sumach, or dogwood.
Rhus toxicodendron Poison ivy, or poison oak.
Rhus aromatica Fragrant sumach.
Rhus toxicodendron var *radicans* Poison ivy.

Order 31. POLYGALACEÆ.—Milk Wort Family.

- Polygala verticillata* Milk wort.
Polygala senega Seneca snakeroot.

Order 32. LEGUMINOSÆ.—Pulse Family.

LUPINUS.

- Lupinus perennis* Wild lupine.

TRIFOLIUM.

- Trifolium arvense* Rabbit foot clover.
Trifolium pratense Red clover.
Trifolium repens White clover.
Trifolium agrarium Yellow or hop clover.
Trifolium procumbens Low hop clover.
Trifolium hybridum Alsike.

MELILOTUS.—Sweet Clover.

- Melilotus officinalis* Yellow melilot.
Melilotus alba White melilot.

MEDICAGO.—Medick.

- Medicago sativa* Lucerne.
Medicago lupulina Black medick.

ROBINIA.—Locust Tree.

- Robinia Pseudacacia* Common locust or false Acacia.
Robinia viscosa Clammy locust.

ASTRAGALUS.

- Astragalus Canadensis* Milk vetch.
Astragalus Cooperi Milk vetch.

DESMODIUM.—Tick Trefoil.

- Desmodium nudiflorum* Tick trefoil.
Desmodium acuminatum Tick trefoil.
Desmodium rotundifolium Tick trefoil.
Desmodium cuspidatum Tick trefoil.
Desmodium pauciculatum Tick trefoil.
Desmodium Canadense Tick trefoil.
Desmodium rigidum Tick trefoil.

 LESPEDEZA.

- Lespedeza reticulata* Bush clover.
Lespedeza hirta Bush clover.

VICIA.—Vetch. Tare.

- Vicia Cracca* Vetch.
Vicia Caroliniana Vetch.
Vicia Americana Vetch.

LATHYRUS.—Everlasting Pea.

- Lathyrus ochroleucus* Vetchling.
Lathyrus palustris Marsh vetchling.

APIOS.—Wild Bean.

- Apios tuberosa* Ground nut.

PHASEOLUS.

- Phaseolus diversifolius* Kidney bean.

AMPHICARPEA.—Hog Peanut.

- Amphicarpea monoica* Hog peanut.

Order 33. ROSACEÆ.—Rose Family.

PRUNUS.—Plum.

- Prunus Americana* Wild yellow or red plum.
Prunus Pennsylvanica Wild red cherry.
Prunus Virginiana Choke cherry.
Prunus serotina Wild black cherry.

SPIRÆA.—Meadow-sweet.

- Spiræa opulifolia* Nine bark.
Spiræa salicifolia Meadow sweet.

AGRIMONIA.

- Agrimonia Eupatoria* Common agrimony.
Agrimonia parviflora Small flowered agrimony.

GEUM.—Avens.

- Geum album* Avens.
Geum strictum Avens.
Geum rivale Purple Avens

WALDSTEINIA.

- Waldsteinia fragarioides* Barren strawberry.

POTENTILLA.—Cinque-foil, Five Finger.

Potentilla Canadensis	Cinque foil.
Potentilla Canadensis var simplex	Five finger.
Potentilla argentea	Five finger.
Potentilla recta	Five finger.
Potentilla Anserina	Silver weed.
Potentilla palustris	Marsh five finger.

FRAGARIA.

Fragaria Virginiana	Wild strawberry.
Fragaria vesca	Wild strawberry.

DALIBARDA.

Dalibarda repens	Dalibarda.
------------------	------------

RUBUS.—Bramble.

Rubus odoratus	Purple flowering raspberry.
Rubus triflorus	Dwarf raspberry.
Rubus strigosus	Wild red raspberry.
Rubus occidentalis	Black raspberry.
Rubus villosus	High blackberry.
Rubus Canadensis	Low blackberry.
Rubus hispidus	Running swamp blackberry.

ROSA.—Rose.

Rosa Carolina	Swamp rose.
Rosa blanda	Early wild rose.
Rosa rubiginosa	Sweet brier.
Rosa micrantha	Smaller sweet brier.

CRATÆGUS.—Hawthorn.

Cratægus Oxyacantha	English hawthorn.
Cratægus coccinea var macracantha	Large spurred thorn.
Cratægus coccinea	Scarlet fruited thorn.
Cratægus Cru-galli	Cockspur thorn.

PYRUS.

Pyrus malus	Apple.
Pyrus communis	Pear.
Pyrus coronaria	Wild Crab apple.
Pyrus arbutifolia	Chokeberry.
Pyrus Americana	Mountain ash.
Pyrus Aucuparia	European rowan tree.

AMELANCHIER.

Amelanchier Canadensis	Shad bush. Service berry.
Amelanchier Canadensis, var rotundifolia	Round leaved amelanchier.
Amelanchier Canadensis, var oblongifolia	Juneberry.

Order 35. SAXIFRAGACEÆ.—Saxifrage Family.

RIBES.—Currant, Gooseberry.

<i>Ribes Cynosbati</i>	Wild gooseberry.
<i>Ribes prostratum</i>	Fetid currant.
<i>Ribes floridum</i>	Wild black currant.
<i>Ribes rubrum</i>	Red currant.
<i>Ribes aureum</i>	Buffalo currant.
<i>Ribes oxycanthoides</i>	Swamp gooseberry.

PARNASSIA.

<i>Parnassia Caroliniana</i>	Grass of Parnassus.
------------------------------------	---------------------

SAXIFRAGA.

<i>Saxifraga Virginiensis</i>	Early saxifrage.
-------------------------------------	------------------

MITELLA.

<i>Mitella diphylla</i>	Mitrewort.
<i>Mitella nuda</i>	Mitrewort.

TIARELLA.

<i>Tiarella cordifolia</i>	False mitrewort.
----------------------------------	------------------

CHRYSOSPLENIUM.

<i>Chrysosplenium Americanum</i>	Golden saxifrage.
--	-------------------

Order 36. CRASSULACEÆ.—Orpine Family.

PENTHORUM.

<i>Penthorum sedoides</i>	Ditch stone-crop.
---------------------------------	-------------------

SEDUM.

<i>Sedum acre</i>	Mossy stone-crop.
<i>Sedum Telephium</i>	Garden orpine or live-for-ever.

Order 38. HAMAMELACEÆ.—Witch Hazel Family.

<i>Hamamelis Virginica</i>	Witch hazel.
----------------------------------	--------------

Order 39. HALORAGEÆ.—Water Milfoil Family.

MYRIOPHYLLUM.

<i>Myriophyllum spicatum</i>	Water milfoil.
<i>Myriophyllum verticillatum</i>	Water milfoil.

Order 41. LYTHRACEÆ.—Loosestrife Family.

LYTHRUM.

Lythrum Salicaria Spiked loosestrife.

NESÆA.

Nesæa verticillata Swamp loosestrife.

Order 42. ONAGRACEÆ.—Evening Primrose Family.

CIRCÆA.

Circæa Lutetiana Enchanter's nightshade.

Circæa alpina Smaller E. nightshade.

GAURA.

Gaura biennis Gaura.

EPILOBIUM.

Epilobium spicatum Great willow herb.

Epilobium hirsutum Hairy willow herb.

Epilobium lineare Swamp willow herb.

Epilobium adencanlon Common willow herb.

ÆNOTHERA.

Ænothera biennis Evening primrose.

Ænothera pumila Small evening primrose.

LUDWIGIA.

Ludwigia palustris Water purslane.

Order 47. FICOIDEÆ.—Ice Plant Family.

MOLLUGO.—Indian Chickweed.

Mollugo verticillata Carpet weed.

Order 48. UMBELLIFERÆ.—Parsley Family.

HYDROCOTYLE.

Hydrocotyle Americana Water pennywort.

SANICULA.

Sanicula Canadensis Canadian black snakeroot.

Sanicula Marilandica Black snakeroot.

DAUCUS.

Daucus Carota Carrot.

HERACLEUM.

Heracleum lanatum Cow parsnip.

PASTINACA.

Pastinaca sativa Common parsnip.

ARCHANGELICA.

Archangelica atropurpurea Great Angelica.

Archangelica hirsuta Angelica.

CONIOSELINUM.

Conioselinum Canadense Hemlock parsley.

THASPIUM.

Thaspium barbinode Meadow parsnip.

Thaspium aureum Golden meadow parsnip.

ZIZIA.

Zizia integrerrima Zizia.

CICUTA.

Cicuta maculata Spotted cowbane.

Cicuta bulbifera Cowbane.

SIUM.

Sium cicutæfolium Water parsnip.

CRYPTOTÆNIA.

Cryptotænia Canadensis Honewort.

OSMORRHIZA.

Osmorrhiza longistylis Smoother sweet cicely.

Osmorrhiza brevistylis Hairy sweet cicely.

CONIUM.

Conium maculatum Poison hemlock.

Order 49. ARALIACEÆ.—Ginseng Family.

ARALIA.

Aralia spinosa Angelica tree.

Aralia racemosa Spikenard.

Aralia nudicaulis Wild sarsaparilla.

Aralia quinquefolia Ginseng.

Aralia trifolia Dwarf ginseng.

Order 50. CORNACEÆ.—Dogwood Family.

CORNUS.

<i>Cornus Canadensis</i>	Dwarf cornel.
<i>Cornus florida</i>	Flowering dogwood.
<i>Cornus circinata</i>	Round leaved dogwood.
<i>Cornus sericea</i>	Silky cornel.
<i>Cornus stolonifera</i>	Red osier dogwood.
<i>Cornus asperifolia</i>	Rough leaved dogwood.
<i>Cornus paniculata</i>	Panicled cornel.
<i>Cornus alternifolia</i>	Alternate leaved cornel.

NYSSA.

<i>Nyssa multiflora</i>	Pepperidge.
-------------------------------	-------------

Order 51. CAPRIFOLIACEÆ.—Honeysuckle Family.

SYMPHORICARPUS.

<i>Symphoricarpus vulgaris</i>	Wolfberry.
<i>Symphoricarpus racemosa</i>	Snowberry.
<i>Symphoricarpus racemosus</i> , var <i>paniculatus</i>	Low snowberry.

LONICERA.

<i>Lonicera sempervirens</i>	Trumpet honeysuckle.
<i>Lonicera parviflora</i>	Small honeysuckle.
<i>Lonicera hirsuta</i>	Honeysuckle.
<i>Lonicera ciliata</i>	Fly honeysuckle.
<i>Lonicera Tartarica</i>	Tartarian honeysuckle.

DIERVILLA.

<i>Diervilla trifida</i>	Bush honeysuckle.
--------------------------------	-------------------

TRIOSTEUM.

<i>Triosteum perfoliatum</i>	Horse gentian.
------------------------------------	----------------

SAMBUCUS.

<i>Sambucus Canadensis</i>	Elder.
<i>Sambucus pubens</i>	Red berried elder.

VIBURNUM.

<i>Viburnum Lentago</i>	Sheep berry.
<i>Viburnum dentatum</i>	Arrow wood.
<i>Viburnum cassinoides</i>	Withe rod.
<i>Viburnum pubescens</i>	Downy arrowwood.
<i>Viburnum acerifolium</i>	Maple leaved arrowwood.
<i>Viburnum Opulus</i>	Cranberry tree.

Order 52. RUBIACEÆ.—Madder Family.

GALIUM.

<i>Galium Aparine</i>	Cleavers.
<i>Galium asprellum</i>	Rough bedstraw.
<i>Galium trifidum</i>	Small bedstraw.
<i>Galium trifidum</i> , var <i>tinctorium</i>	Bedstraw.
<i>Galium triflorum</i>	Sweet bedstraw.
<i>Galium pilosum</i>	Bedstraw.
<i>Galium circeazans</i>	Wild liquorice.
<i>Galium lanceolatum</i>	Wild liquorice.
<i>Galium boreale</i>	Northern bedstraw.
<i>Galium verum</i>	Yellow bedstraw.

CEPHALANTHUS.

<i>Cephalanthus occidentalis</i>	Button bush.
--	--------------

MITCHELLA.

<i>Mitchella repens</i>	Partridge berry.
-------------------------------	------------------

HOUSTONIA.

<i>Houstonia purpurea</i> , var <i>ciliolata</i>	Houstonia.
--	------------

Order 54. DIPSACEÆ.—Teasel Family.

<i>Dipsacus sylvestris</i>	Wild teasel.
----------------------------------	--------------

Order 55. COMPOSITÆ.—Composite Family.

EUPATORIUM.

<i>Eupatorium purpureum</i>	Joe Pye weed.
<i>Eupatorium perfoliatum</i>	Boneset.
<i>Eupatorium ageratoides</i>	White snakeroot.

TUSSILAGO.

<i>Tussilago Farfara</i>	Colt's foot.
--------------------------------	--------------

SERICOCARPUS.

<i>Sericocarpus solidagineus</i>	White topped aster.
--	---------------------

ASTER.

<i>Aster corymbosus</i>	Starwort.
<i>Aster macrophyllus</i>	Starwort.
<i>Aster umbellatus</i>	Starwort.
<i>Aster lævis</i>	Starwort.
<i>Aster undulatus</i>	Starwort.
<i>Aster cordifolius</i>	Starwort.
<i>Aster sagittifolius</i>	Starwort.
<i>Aster diffusus</i>	Starwort.
<i>Aster paniculatus</i>	Starwort.
<i>Aster puniceus</i>	Starwort.
<i>Aster Novæ Angliæ Tradescanti</i>	Starwort.

ERIGERON.

<i>Erigeron bellidifolius</i>	Robin's plantain.
<i>Erigeron Philadelphicus</i>	Common fleabane.
<i>Erigeron Canadensis</i>	Fleabane.
<i>Erigeron annuus</i>	Daisy fleabane.
<i>Erigeron strigosus</i>	Daisy fleabane.

BELLIS.

<i>Bellis perennis</i>	Daisy.
------------------------------	--------

SOLIDAGO.

<i>Solidago squarrosa</i>	Golden rod.
<i>Solidago bicolor</i>	Golden rod.
<i>Solidago latifolia</i>	Golden rod.
<i>Solidago cæsia</i>	Golden rod.
<i>Solidago juncea</i>	Golden rod.
<i>Solidago patula</i>	Golden rod.
<i>Solidago rugosa</i>	Golden rod.
<i>Solidago Canadensis</i>	Golden rod.
<i>Solidago lanceolata</i>	Golden rod.
<i>Solidago nemoralis</i>	Golden rod.

INULA.

<i>Inula Helenium</i>	Elecampane.
-----------------------------	-------------

POLYMNIA.

<i>Polymnia Canadensis</i>	Leaf cup.
----------------------------------	-----------

AMBROSIA.

<i>Ambrosia artemisiæfolia</i>	Rag weed.
--------------------------------------	-----------

XANTHIUM.

<i>Xanthium Canadense</i> ..	Cockle bur.
------------------------------	-------------

HELIOPSIS.

<i>Heliopsis scabra</i>	Ox eye.
-------------------------------	---------

RUDBECKIA.

<i>Rudbeckia laciniata</i>	Cone flower.
<i>Rudbeckia hirta</i>	Cone flower.

HELIANTHUS.

<i>Helianthus annuus</i>	Sunflower.
<i>Helianthus strumosus</i>	Sunflower.
<i>Helianthus divaricatus</i>	Sunflower.
<i>Helianthus decapetalus</i>	Sunflower.

COREOPSIS.

<i>Coreopsis trichosperma</i>	Tick seed.
-------------------------------------	------------

BIDENS.

<i>Bidens frondosa</i>	Beggar ticks.
<i>Bidens connata</i>	Swamp beggar ticks.
<i>Bidens cernua</i>	Smaller bur marigold.
<i>Bidens chrysanthemoides</i>	Larger bur marigold.

HELENIUM.

<i>Helenium autumnale</i>	Sneeze weed.
---------------------------------	--------------

ANTHEMIS.

<i>Anthemis Cotula</i>	May weed.
------------------------------	-----------

ACHILLEA.

<i>Achillea Millefolium</i>	Yarrow.
-----------------------------------	---------

CHRYSANTHEMUM.

<i>Chrysanthemum Leucanthemum</i>	Oxeye daisy.
---	--------------

TANACETUM.

<i>Tanacetum vulgare</i>	Tansy.
--------------------------------	--------

ARTEMISIA.

<i>Artemisia Canadensis</i>	Mugwort.
<i>Artemisia Absinthium</i>	Wormwood.
<i>Artemisia biennis</i>	Biennial wormwood.

GNAPHALIUM.

<i>Gnaphalium polyccephalum</i>	Common everlasting.
<i>Gnaphalium uliginosum</i>	Low cud weed.

ANTENNARIA.

<i>Antennaria plantaginifolia</i>	Plantain leaved everlasting.
---	------------------------------

ANAPHALIS.

<i>Anaphalis margaritacea</i>	Pearly everlasting.
-------------------------------------	---------------------

ERECHTHITES.

<i>Erechthites hieracefolia</i>	Fireweed.
---------------------------------------	-----------

SENECIO.

<i>Senecio aureus</i>	Golden ragwort.
<i>Senecio aureus</i> , var <i>balsamitæ</i> .	

CNICUS.

<i>Cnicus discolor</i>	Thistle.
<i>Cnicus lanceolatum</i>	Pasture thistle.
<i>Cnicus arvensis</i>	Canada thistle.

ARCTIUM.

Arctium Lappa Common burdock.

LAMPSANA.

Lampsana communis Nipplewort.

CICHORIUM.

Cichorium Intybus Succory or chicory

LEONTODON.

Leontodon autumnalis Fall dandelion.

CENTAUREA.

Centaurea cyanus Bluebottle.

HIERACIUM.

Hieracium Canadense Canada hawkweed.

Hieracium scabrum Rough hawkweed.

Hieracium venosum Rattlesnake weed.

Hieracium paniculatum Panicked hawkweed.

Hieracium marianum Hawkweed.

Hieracium aurantiacum Hawkweed.

PRENANTHES.

Prenanthes albus White lettuce.

Prenanthes altissimus Tall white lettuce.

TRAGOPOGON.

Tragopogon porrifolius Oyster plant.

TARAXACUM.

Taraxacum officinale Common dandelion.

LACTUCA.

Lactuca Canadensis Wild lettuce.

Lactuca Scariola Prickly lettuce.

Lactuca leucophæa False or blue lettuce.

SONCHUS.

Sonchus oleraceus Common sow thistle.

Sonchus asper Spiny-leaved sow thistle.

Sonchus arvensis Field sow thistle.

Order 56. LOBELIACEÆ.—Lobelia Family.

LOBELIA.

Lobelia cardinalis Cardinal flower.

Lobelia syphilitica Great Lobelia.

Lobelia inflata Indian tobacco.

Lobelia Kalmii Kalm's Lobelia.

Order 57. CAMPANULACEÆ—Campanula Family.

CAMPANULA.

- Campanula rotundifolia Harebell.
 Campanula aparinoides Marsh bellflower.
 Campanula Americana Tall bellflower.
 Campanula rapunculoides Bellflower.

SPECULARIA.

- Specularia pertoliata Venus' looking-glass.

Order 58. ERICACEÆ.—Heath Family.

GAYLUSSACIA.

- Gaylussacia resinosa Black huckleberry.

VACCINIUM.

- Vaccinium stamineum Squaw huckleberry.
 Vaccinium corymbosum Swamp blueberry.
 Vaccinium Pennsylvanicum Blueberry.

CHIOGENES.

- Chiogenes hispidula Creeping snowberry.

ARCTOSTAPHYLOS.

- Arctostaphylos Uva-ursi Bear berry.

GAULTHERIA.

- Gaultheria procumbens Creeping wintergreen.

CASSANDRA.

- Cassandra calyculata Leather leaf.

PYROLA.

- Pyrola rotundifolia Pyrola.
 Pyrola rotundifolia, var incarnata Pyrola.
 Pyrola rotundifolia, var asarifolia Pyrola.
 Pyrola elliptica Shin leaf.
 Pyrola chlorantha Pyrola.
 Pyrola secunda Pyrola.

MONESES.

- Moneses uniflora One-flowered pyrola.

CHIMAPHILA.

- Chimaphila umbellata Princess pine.
 Chimaphila maculata Spotted wintergreen.

MONOTROPA.

- Monotropa uniflora Indian pipe.
 Monotropa Hypopitys False beech-drops.

Order 61. PRIMULACEÆ.—Primrose Family.

TRIENTALIS.

- Trientalis Americana Star flower.

STEIRONEMA.—Loosestrife.

- Steironema ciliatum Loosestrife.
 Steironema longifolium Loosestrife.

LYSIMACHIA.

- Lysimachia thysiflora Tufted loosestrife.
 Lysimachia stricta Loosestrife.
 Lysimachia nummularia Moneywort.

SAMOLUS.

- Samolus Valenderi, var Americanus . . . Water pimpernel.

Order 65. OLEACEÆ.—Olive Family.

LIGUSTRUM.

- Ligustrum vulgare Privet or prim.

SYRINGA.

- Syringa vulgaris Lilac.

FRAXINUS.

- Fraxinus Americana White ash.
 Fraxinus excelsior European ash.
 Fraxinus pubescens Red ash.
 Fraxinus sambucifolia Black or water ash.

Order 66. APOCYNACEÆ.—Dogbane Family.

APOCYNUM.

- Apocynum cannabinum Indian hemp.
 Apocynum androsæmifolium Dogbane.

Order 67. ASCLEPIADACEÆ.—Milkweed Family.

ASCLEPIAS.

- Asclepias cornuti Common milkweed.
 Asclepias phytolaccoides Poke milkweed.
 Asclepias quadrifolia Milkweed.
 Asclepias incarnata Swamp milkweed.
 Asclepias tuberosa Butterfly weed.

VINCETOXICUM.

Vincetoxicum nigrum Climbing poison.

Order 69. GENTIANACEÆ.—Gentian Family.

FRASERA.

Frasera Carolinensis American Columbo.

GENTIANA.

Gentiana serrata Fringed gentian.

Gentiana Andrewsii Closed gentian.

Order 70. POLEMONIACEÆ.—Polemonium Family.

POLEMONIUM.

Polemonium reptans Greek valerian.

PHLOX.

Phlox divaricata Wild phlox.

Order 71. HYDROPHYLLACEÆ.—Waterleaf Family.

HYDROPHYLLUM.

Hydrophyllum Virginicum Waterleaf.

Hydrophyllum Canadense Waterleaf.

Order 72. BORRAGINACEÆ.—Borage Family.

ECHIUM.

Echium vulgare Viper's bugloss.

LYCOPSIS.

Lycopsis Arvensis Bugloss.

LITHOSPERMUM.

Lithospermum arvense Corn gromwell.

Lithospermum officinale Common gromwell.

MYOSOTIS.

Myosotis palustris Blue forget me not.

Myosotis laxa Forget me not.

Myosotis arvensis Forget me not.

Myosotis verna Forget me not.

ECHINOSPERMUM.

Echinospermum Lappula Stickseed.

CYNOGLOSSUM.

Cynoglossum officinale Common hound's tongue.

Cynoglossum Virginicum Wild comfrey.

Order 73. CONVULVULACEÆ.—Convolvulus Family.

CONVOLVULUS.

- Convolvulus sepium.....Hedge bindweed.
 Convolvulus spithamæaBindweed.

CUSCUTA.

- Cuscuta Gronovii.....Gold thread.

Order 74. SOLANACEÆ.—Nightshade Family.

SOLANUM.

- Solanum DulcamaraBitter sweet.
 Solanum nigrumCommon nightshade.

PHYSALIS.

- Physalis grandiflora.....Ground cherry.
 Physalis pubescensGround cherry.
 Physalis viscosaGround cherry.
 Physalis lanceolataGround cherry.

NICANDRA.

- Nicandra physaloides.....Apple of Peru.

DATURA.

- Datura StramoniumThorn apple.

Order 75. SCROPHULARIACEÆ.—Figwort Family.

VERBASCUM.

- Verbascum ThapsusCommon mullein.
 Verbascum BlattariaMoth mullein.

LINARIA.

- Linaria CanadensisWild toad flax.
 Linaria vulgarisToad flax, butter and eggs.

ANTIRRHINUM.

- Antirrhinum OrontiumSnapdragon.

SCROPHULARIA

- Scrophularia nodosaFigwort.

CHELONE.

- Chelone glabra.....Turtlehead.

PENTSTEMON.

- Pentstemon pubescens.....Beard tongue.

MIMULUS.

Mimulus ringens Monkey flower.

GRATIOLA.

Gratiola Virginiana Hedge hyssop.

ILYSANTHES.

Ilysanthes gratioloides False pimpernel.

VERONICA.

Veronica Chamædrys Speedwell.
Veronica Americana American brooklime.
Veronica scutellata Marsh speedwell.
Veronica officinalis Common speedwell.
Veronica serpyllifolia Time leaved speedwell.
Veronica peregrina Purslane speedwell.
Veronica arvensis Corn speedwell.
Veronica agrestis Field speedwell.

GERARDIA.

Gerardia purpurea Purple gerardia.
Gerardia purpurea, var *paupercula* Gerardia.
Gerardia quercifolia Smooth false foxglove.
Gerardia pedicularia Gerardia.

CASTILLEIA.

Castilleia coccinea Painted cup.

PEDICULARIS.

Pedicularis Canadensis Common lousewort.
Pedicularis lanceolata Lousewort.

MELAMPYRUM.

Melampyrum Americanum Cow wheat.

Order 76. OROBANCHACEÆ.—Broom Rape Family.

EPIPHEGUS.

Epiphegus Virginiana Beech-drops. Cancer root.

CONOPHOLIS.

Conopholis Americana Squaw-root. Cancer root.

APHYLLON.

Aphyllon uniflorum One-flowered cancer root.

Order 77. LENTIBULACEÆ.—Bladderwort Family.

UTRICULARIA.

Utricularia vulgaris Greater bladderwort.
Utricularia gibba Small bladderwort.

Order 78. BIGNONIACEÆ.—Bignonia Family.

MARTYNIA.

Martynia proboscidea Unicorn plant.

Order 80. ACANTHACEÆ.—Acanthus Family.

DIANTHERA.

Dianthera Americana Water willow.

Order 81. VERBENACEÆ.—Vervain Family.

VERBENA.

Verbena hastata Blue vervain.

Verbena urticæfolia White vervain.

PHRYMA.

Phryma Leptostachya Lopseed.

Order 82. LABIATÆ.—Mint Family.

TEUCRIUM.

Teucrium Canadense American Germander.

MENTHA.

Mentha Canadensis Canada mint.

Mentha viridis Spearmint.

Mentha piperita Peppermint.

LYCOPUS.

* *Lycopus Virginicus* Bugle weed.

Lycopus sinuatus Water horehound.

CALAMINTHA.

Calamintha Nuttallii Calaminth.

Calamintha clinopodium Basil.

MELISSA.

Melissa officinalis Balm.

HEDEOMA.

Hedeoma pulegioides American pennyroyal.

COLLINSONIA.

Collinsonia Canadensis Horse balm.

MONARDA.

Monarda fistulosa Wild bergamot.

LOPHANTHUS.

Lophanthus nepetoides Giant hyssop.

NEPETA.

- Nepeta Cataria Catnip.
 Nepeta Glechoma Ground ivy.

PHYSOSTEGIA.

- Physostegia Virginiana False dragonhead.

BRUNELLA.

- Brunella vulgaris Self-heal.

SCUTELLARIA.

- Scutellaria canescens Skullcap.
 Scutellaria parvula Skullcap.
 Scutellaria, galericulata Skullcap.
 Scutellaria lateriflora Skullcap.

GALEOPSIS.

- Galeopsis Tetrahit Hemp nettle.

STACHYS.

- Stachys palustris Hedge nettle.

LEONURUS.

- Leonurus Cardiaea Motherwort.

Order 83. PLANTAGINACEÆ.—Plantain Family.

PLANTAGO.

- Plantago major Common plantain.
 Plantago lanceolata Ribgrass.

Order 86. AMARANTACEÆ.—Amaranth Family.

AMARANTUS.

- Amarantus retroflexus Pigweed.
 Amarantus albus Pigweed.

Order 87. CHENOPODIACEÆ.—Goosefoot Family.

CHENOPODIUM.

- Chenopodium album Lamb's quarters.
 Chenopodium glaucum Oak leaved goosefoot.
 Chenopodium Botrys Jerusalem oak.

ATRIPLEX.—Orache.

- Atriplex patula Orache.
 Atriplex patula, var hastata Orache.

CORISPERMUM.

- Corispermum hyssopifolium Bugseed.

Order 88. PHYTOLACCACEÆ.—Pokeweed Family.

PHYTOLACCA.

Phytolacca decandra Pigeon berry.

Order 89. POLYGONACEÆ.—Buckwheat Family.

POLYGONUM.

Polygonum Hartwrightii Knotweed.
Polygonum orientale Prince's feather.
Polygonum incarnatum Knotweed.
Polygonum Hydropiper Smartweed.
Polygonum acre Water smartweed.
Polygonum Virginianum Knotweed.
Polygonum aviculare Knotgrass.
Polygonum aviculare, var erectum Knotgrass.
Polygonum arifolium Tear thumb.
Polygonum sagittatum Arrow leaved tear thumb.
Polygonum convolvulus Black bindweed.
Polygonum dumetorum Climbing false buckwheat.

FAGOPYRUM.

Fagopyrum esculentum Buckwheat.

RUMEX.

Rumex crispus Curled dock.
Rumex sanguineus Bloody veined dock.
Rumex Acetosella Sheep sorrel.

Order 91. ARISTOLOCHIACEÆ.—Birthwort Family.

ASARUM.

Asarum Canadense Wild ginger.

Order 92. PIPERACEÆ.—Lizard's Tail Family.

SAURURUS.

Saururus cernuus Lizard's tail.

Order 93. LAURACEÆ.—Laurel Family.

SASSAFRAS.

Sassafras officinale Sassafras.

LINDERA.

Lindera Benzoin Wild allspice.

Order 94.—THYMELEACEÆ.—Mezereum Family.

DAPHNE.

Daphne mezereum English Daphne.

Order 95. ELÆAGNACEÆ.—Oleaster Family.

SHEPHERDIA.

Shepherdia Canadensis Canadian shepherdia.

Order 97. SANTALACEÆ.—Sandalwood Family.

COMANDRA.

Comandra umbellata Bastard toad flax.

Order 98. EUPHORBIACEÆ.—Spurge Family.

EUPHORBIA.

Euphorbia maculata Spurge.

Euphorbia Helioscopia Spurge.

ACALYPHA.

Acalypha Virginica Three-seeded mercury.

Order 99. URTICACEÆ.—Nettle Family.

ULMUS.

Ulmus Americana Elm.

CELTIS.

Celtis occidentalis Nettle tree or sugar berry.

MORUS.

Morus rubra Red mulberry.

Morus alba White mulberry.

URTICA.

Urtica gracilis Nettle.

LAPORTEA.

Laportea Canadensis Wood nettle.

PILEA.

Pilea pumila Clearweed.

BOEHMERIA.

Boehmeria cylindrica False nettle.

HUMULUS.

Humulus Lupulus Common hop.

Order 100. PLATANACEÆ.—Plane Tree Family.

PLATANUS.

Platanus Occidentalis.....Sycamore tree.

Order 101. JUGLANDACEÆ.—Walnut Family.

JUGLANS.

Juglans cinereaButternut.
Juglans nigra.....Black walnut.

* CARYA.

Carya albaShell bark hickory.
Carya porcinaPig nut.
Carya amaraBitter nut.
Carya tomentosaDowny hickory.

Order 103. CUPULIFERÆ.—Oak Family.

QUERCUS.

Quercus albaWhite oak.
Quercus bicolorSwamp white oak.
Quercus PrinusChestnut oak.
Quercus acuminataYellow chestnut oak.
Quercus coccineaScarlet oak.
Quercus rubraRed oak.
Quercus palustris.....Swamp pin oak.

FAGUS.

Fagus ferruginea.....American beech.

OSTRYA.

Ostrya Virginica.....American hop horn beam.

CARPINUS.

Carpinus AmericanaIron wood.

BETULA.

Betula luteaYellow birch.
Betula albaWhite birch.
Betula papyraceaPaper birch.

ALNUS.

Alnus incanaAlder.

Order 104. SALICACEÆ.—Willow Family.

SALIX.

Salix discolorGlaucous willow.
Salix petiolarisPetioled willow.
Salix albaWhite willow.
Salix Babylonica.....Weeping willow.
Salix longifoliaLong leaved willow.

POPULUS.

<i>Populus grandidentata</i>	Large toothed aspen.
<i>Populus monilifera</i>	Cotton wood.
<i>Populus balsamifera</i>	Balsam poplar.
<i>Populus alba</i>	White poplar.
<i>Populus tremuloides</i>	Aspen.

Order 106. CERATOPHYLLACEÆ.—Hornwort Family.

CERATOPHYLLUM.

<i>Ceratophyllum demersum</i>	Hornwort.
-------------------------------------	-----------

Order 107. CONIFERÆ.—Pine Family.

PINUS.

<i>Pinus Strobus</i>	White oak.
<i>Pinus resinosa</i>	Red pine.

ABIES.

<i>Abies balsamea</i>	Balsam Fir.
-----------------------------	-------------

TSUGA.

<i>Tsuga Canadensis</i>	Hemlock.
-------------------------------	----------

LARIX.

<i>Larix Americana</i>	Larch.
------------------------------	--------

THUYA.

<i>Thuja Occidentalis</i>	American arbor vitæ.
---------------------------------	----------------------

JUNIPERUS.

<i>Juniperus Virginiana</i>	Red cedar.
<i>Juniperus sabina</i> var <i>procumbens</i>	Creeping Juniper.
<i>Juniperus communis</i>	Juniper.

TAXUS.

<i>Taxus baccata</i> var <i>Canadensis</i>	American yew.
--	---------------

Order 108. HYDROCHARIDACEÆ.—Frog's Bit Family.

ANACHARIS.

<i>Anacharis Canadensis</i>	Waterweed.
-----------------------------------	------------

CHARA.

<i>Chara fragilis</i>	Waterweed.
-----------------------------	------------

VALLISNERIA.

<i>Vallisneria spiralis</i>	Eel grass. Tape grass.
-----------------------------------	------------------------

Order 110. ORCHIDACEÆ.

ORCHIS.

Orchis spectabilis Showy orchis.

HABENARIA.

Habenaria virescens Rein orchis.
Habenaria viridis Rein orchis.
Habenaria hyperborea Rein orchis.
Habenaria Hookeri Rein orchis.
Habenaria blephariglottis White fringed orchis.
Habenaria lacera Ragged fringed orchis.
Habenaria psycodes Purple fringed orchis.

GOODYERA.

Goodyera pubescens Rattlesnake plantain.

SPIRANTHES.—Ladies' Tresses.

Spiranthes latifolia Ladies' tresses.
Spiranthes Romanzoviana Ladies' tresses.
Spiranthes cernua Ladies' tresses.

LISTERA.

Listera convallarioides Tway blade.

MICROSTYLIS.

Microstylis monophyllis Adder's mouth.

LIPARIS.

Liparis Læselii Tway blade.

CORALLORHIZA.

Corallorhiza innata Coral root.
Corallorhiza multiflora Coral root.

APLECTRUM.

Aplectrum hyemale Adam and Eve.

CYPRIPEDIUM.

Cypripedium parviflorum Moccasin flower.
Cypripedium pubescens Moccasin flower.

Order 113. IRIDACEÆ.—Iris Family.

Iris versicolor Large blue flag.

SISYRINCHIUM.

Sisyrinchium anceps Blue-eyed grass.

 Order 114. AMARYLLIDACEÆ.—Amaryllis Family.

HYPOXYS.

Hypoxys erecta Star grass.

Order 115. DIOSCOREACEÆ.—Yam Family.

DIOSCOREA.

Dioscorea villosa Wild yam root.

Order 116. LILIACEÆ.—Lily Family.

TRILLIUM.

Trillium grandiflorum Large white trillium.

Trillium erectum Purple trillium.

Trillium erectum, var *viride* Trillium.

MEDEOLA.

Medeola Virginica Indian cucumber.

MELANTHIUM.

Melanthium Virginicum Bunch flower.

UVULARIA.

Uvularia grandiflora Bellwort.

Uvularia perfoliata Smaller bellwort.

Uvularia sessilifolia Bellwort.

SMILACINA.

Smilacina racemosa False spikenard.

Smilacina stellata False Solomon's seal.

Smilacina trifolia False Solomon's seal.

Smilacina bifolia False Solomon's seal.

POLYGONATUM.

Polygonatum giganteum Solomon's seal.

Polygonatum biflorum Solomon's seal.

ASPARAGUS.

Asparagus officinalis Asparagus.

LILIUM.

Lilium Philadelphicum Wild orange red lily.

Lilium Canadense Wild yellow lily.

Lilium Carolinianum Lily.

ERYTHRONIUM.

- Erythronium Americanum..... Yellow adder's tongue.
 Erythronium albidum..... White dog's tooth violet.

ALLIUM.

- Allium tricoccum..... Wild leek.
 Allium Canadense Wild garlic.

SMILAX.

- Smilax hispida..... Greenbrier.
 Smilax herbacea Carrion flower.

Order 117. PONTEDERIACEÆ.—Pickerel Weed Family.

PONTEDERIA.

- Pontederia cordata, var angustifolia Pickerel weed.

SCHOLLERA.

- Schollera graminea Water star grass.

Order 121. JUNCACEÆ.—Rush Family.

LUZULA.

- Luzula pilosa Woodrush.
 Luzula campestris, var pallescens Woodrush.

JUNCUS.

- Juncus effusus Soft rush.
 Juncus filiformis Rush.
 Juncus Balticus Rush.
 Juncus Bufonius Rush.
 Juncus tenuis Rush.
 Juncus articulatus Rush.
 Juncus alpinus var insignis Rush.
 Juncus nodosus Rush.
 Juncus nodosus, var megacephalus Rush.
 Juncus Canadensis, var longicaudatus .. Rush.

Order 122. TYPHACEÆ.—Cat-Tail Family.

TYPHA.

- Typha latifolia Cat-tail flag.
 Typha angustifolia Small cat-tail flag.

SPARGANIUM.

- Sparganium eurycarpum Bur-reed.
 Sparganium simplex Bur-reed.

Order 123. ARACEÆ.—Arum Family.

ARISEMA.

Arisema triphyllum Indian turnip.

SYMPLOCARPUS.

Symplocarpus fetidus Skunk cabbage.

Order 125. ALISMACEÆ.—Water Plantain Family.

TRIGLOCHIN.

Triglochin palustre Arrow grass.

ALISMA.

Alisma Plantago var *Americanum* Water plantain.

SAGITTARIA.

Sagittaria variabilis Arrowhead.

Sagittaria variabilis, var *hastata* Arrowhead.

Sagittaria variabilis, var *angustifolia* .. Arrowhead.

Sagittaria heterophylla Arrowhead.

Order 126. NAIADACEÆ.—Pondweed Family.

NAIAS.

Najas flexilis Naiad.

POTAMOGETON.

Potamogeton natans Pondweed.

Potamogeton natans, var *prolixus* Pondweed.

Potamogeton mucronatus Pondweed.

Potamogeton prælongus Pondweed.

Potamogeton perfoliatus .. Pondweed.

Potamogeton pauciflorus..... Pondweed.

Potamogeton pusillus Pondweed.

Potamogeton zosterifolius Pondweed.

Potamogeton pectinatus Pondweed.

Order 128. CYPERACEÆ.—Sedge Family.

CYPERUS.

Cyperus diandrus Galingale.

Cyperus esculentus Galingale.

Cyperus strigosus Galingale.

Cyperus Schweinitzii Galingale.

Cyperus filiculmis Galingale.

DULICHIMUM.

Dulichium spathaceum Dulichium.

ELEOCHARIS.

<i>Eleocharis obtusa</i>	Spikerush.
<i>Eleocharis palustris</i>	Spikerush.
<i>Eleocharis acicularis</i> ..	Spikerush.

SCIRPUS.

<i>Scirpus pungens</i>	Bulrush.
<i>Scirpus lacustris</i>	Bulrush.
<i>Scirpus fluviatilis</i>	Clubrush.
<i>Scirpus sylvaticus</i>	Clubrush.
<i>Scirpus atrovirens</i>	Clubrush.

ERIOPHORUM.

<i>Eriophorum cyperinum</i>	Cotton or wool grass.
-----------------------------------	-----------------------

CAREX.

<i>Carex festucasea</i>	Sedge.
<i>Carex echinata</i>	Sedge.
<i>Carex polytrichoides</i>	Sedge.
<i>Carex tribuloides</i> var <i>cristata</i>	Sedge.
<i>Carex teretiuscula</i>	Sedge.
<i>Carex vulpinoidea</i>	Sedge.
<i>Carex sparganioides</i>	Sedge.
<i>Carex cephalophora</i>	Sedge.
<i>Carex rosea</i>	Sedge.
<i>Carex tenella</i>	Sedge.
<i>Carex scoparia</i>	Sedge.
<i>Carex virescens</i>	Sedge.
<i>Carex straminea</i>	Sedge.
<i>Carex stricta</i>	Sedge.
<i>Carex crinita</i>	Sedge.
<i>Carex aurea</i>	Sedge.
<i>Carex Crawei</i>	Sedge.
<i>Carex stricta</i> var <i>decora</i>	Sedge.
<i>Carex granularis</i>	Sedge.
<i>Carex gracillima</i>	Sedge.
<i>Carex plantaginea</i>	Sedge.
<i>Carex Careyana</i>	Sedge.
<i>Carex laxiflora</i> var <i>patulifolia</i>	Sedge.
<i>Carex eburnea</i>	Sedge.
<i>Carex pedunculata</i>	Sedge.
<i>Carex Pennsylvanica</i>	Sedge.
<i>Carex flava</i>	Sedge.
<i>Carex Oederi</i>	Sedge.
<i>Carex intumescens</i>	Sedge.
<i>Carex Grayii</i>	Sedge.
<i>Carex lupulina</i>	Sedge.
<i>Carex Tuckermani</i>	Sedge.
<i>Carex tribuloides</i>	Sedge.
<i>Carex triceps</i>	Sedge.

 Order 129. GRAMINEÆ.—Grass Family.

LEERSIA.

Leersia oryzoides Rice cut grass.

ALOPECURUS.

Alopecurus aristulatus Foxtail grass.

PHLEUM.

Phleum pratense Timothy.

SPOROBOLUS.

Sporobolus vaginæflorus Rush grass.

AGROSTIS.

Agrostis perennans Thin grass.

Agrostis scabra Hair grass.

Agrostis vulgaris Red top.

Agrostis alba White rent grass.

CINNA.

Cinna pendula Wood reed grass.

MUHLENBERGIA.

Muhlenbergia sylvatica Drop seed grass.

Muhlenbergia Willdenovii Drop seed grass.

ORYZOPSIS.

Oryzopsis asperifolia Mountain rice.

CYNOSURUS.

Cynosurus cristatus Dog's-tail grass.

DACTYLIS.

Dactylis glomerata Orchard grass.

GLYCERIA.

Glyceria nervata Fowl meadow grass

Glyceria fluitans Fowl meadow grass

POA.

Poa compressa Wire grass.

Poa serotina False red top.

Poa pratensis Meadow grass.

Poa debilis Weak meadow grass.

FESTUCA.

Festuca elatior Meadow fescue.

Festuca nutans Fescue.

BROMUS.

- Bromus secalinus* Cheat or chess.
Bromus ciliatus Brome grass.

LOLIUM.

- Lolium perenne* Darnel or rye grass.
Lolium temulentum Bearded darnell.

HORDEUM.

- Hordeum jubatum* Squirrel-tail grass.

ELYMUS.

- Elymus Virginicus* Lyme grass.
Elymus Canadensis Lyme grass.
Elymus striatus Lyme grass.
Elymus sativa Lyme grass.

CHRYSOPOGON.

- Chrysopogon nutans* Wood grass.

ASPRELLA.

- Asprella hystrix* Bottle brush grass.

DANTHONIA.

- Danthonia spicata* Wild oat grass.

AIRA.

- Aira cæspitosa* Hair grass.

HOLCUS.

- Holcus lanatus* Velvet grass.

ANTHOXANTHUM.

- Anthoxanthum odoratum* Sweet vernal grass.

PANICUM.

- Panicum sanguinale* Crab grass.
Panicum capillare Old witch grass.
Panicum latifolium Panic grass.
Panicum dichotomum Panic grass.
Panicum Crus-galli Barnyard grass.

SETARIA.

- Setaria viridis* Green foxtail grass.

ANDROPOGON.

- Andropogon provincialis* Beard grass.

AGROPYRUM.

- Agropyrum caninum* Spear grass.

Order 130. EQUISETACEÆ.—Horsetail Family.

EQUISETUM.

<i>Equisetum arvense</i>	Common horsetail.
<i>Equisetum pratense</i>	Meadow horsetail.
<i>Equisetum palustre</i>	Water horsetail.
<i>Equisetum limosum</i>	River horsetail.
<i>Equisetum hyemale</i>	Scouring rush.
<i>Equisetum variegatum</i>	Variegated horsetail.
<i>Equisetum scirpoides</i>	Little horsetail.

Order 131. FILICES.—Ferns.

POLYPODIUM.

<i>Polypodium vulgare</i>	Polypody.
-------------------------------------	-----------

ADIANTUM.

<i>Adiantum pedatum</i>	Maidenhair.
-----------------------------------	-------------

PTERIS.

<i>Pteris aquilina</i>	Common brake.
----------------------------------	---------------

PELLEA.

<i>Pellaea gracilis</i>	Cliff brake.
<i>Pellaea atropurpurea</i>	Cliff brake.

ASPLENIUM.

<i>Asplenium Trichomanes</i>	Spleenwort.
<i>Asplenium angustifolium</i>	Spleenwort.
<i>Asplenium thelypteroides</i>	Spleenwort.
<i>Asplenium Filix femina</i>	Spleenwort.

SCOLOPENDRIUM.

<i>Scolopendrium vulgare</i>	Hart's-tongue.
--	----------------

CAMPTOSORUS.

<i>Camptosorus rhizophyllus</i>	Walking leaf.
---	---------------

PHEGopteris.

<i>Phegopteris polypodioides</i>	Beech fern.
<i>Phegopteris Dryopteris</i> .	

ASPIDIUM.

<i>Aspidium Thelypteris</i>	Shield fern.
<i>Aspidium Noveboracense</i> .	
<i>Aspidium spinulosum</i> .	
<i>Aspidium spinulosum</i> var <i>intermedium</i> .	
<i>Aspidium spinulosum</i> var <i>dilatatum</i> .	
<i>Aspidium cristatum</i> var <i>Clintonianum</i> .	
<i>Aspidium Goldianum</i> .	
<i>Aspidium Filix mas</i> .	
<i>Aspidium marginale</i> .	
<i>Aspidium acrostichoides</i> .	
<i>Aspidium acrostichoides</i> var <i>incisum</i> .	
<i>Aspidium aculeatum</i> .	

CYSTOPTERIS.

Cystopteris bulbifera Bladder fern.

STRUTHIOPTERIS.

Struthiopteris Germanica Ostrich fern.

ONOCLEA.

Onoclea sensibilis Sensitive fern.

OSMUNDA.

Osmunda regalis Flowering royal fern.

Osmunda Claytoniana.

Osmunda cinnamomea Cinnamon fern.

LOMARIA.

Lomaria spicant Deer fern.

Order 132. OPHIOGLOSSACEÆ.—Adder's Tongue Family.

BOTRYCHIUM.

Botrychium Lunaria (Grape fern) Moonwort.

Botrychium lanceolatum.

Botrychium Virginicum.

Botrychium lunaroides.

Botrychium lunaroides, var *obliquum*.

Botrychium matricariæfolium.

Botrychium lunaroides, var *dissectum*.

Order 133. LYCOPODIACEÆ.—Club Moss Family.

LYCOPODIUM.

Lycopodium lucidulum Club moss.

Lycopodium complanatum Club moss.

Order 134. SELAGINELLACEÆ.

SELAGINELLA.

Selaginella apus.

HEPATICÆ.—Liverworts.

Preissia hemispherica Liverwort.

Trichocolea tomentella Liverwort.

Kantia trichomanis Liverwort.

Fegatella conica Liverwort.

Porella platyphylla Liverwort.

MUSCI.

HYPNUM.

Hypnum chrysophyllum.
Hypnum curvifolium.
Hypnum Haldanianum.
Hypnum imponens.
Hypnum latum.
Hypnum rivulare.
Hypnum Rutabulum.
Hypnum salebrosum.
Hypnum serpens.
Hypnum splendens.
Hypnum stellatum.
Hypnum strigosum.
Hypnum triquetrum.
Hypnum uncinatum.

MNIUM.

Mnium cuspidatum.
Mnium affine.

POLYTRICHUM.

Polytrichum juniperinum.

SPHAGNUM.

Sphagnum cymbifolium.

WEBERA.

Webera annotina.

FUNARIA.

Funaria hygrometrica.

ANOMODON.

Anomodon rostratus.
Anomodon obtusifolius.

CERATODON.

Ceratodon purpureus.

BRYUM.

Bryum intermedium.
Bryum roseum.

BARTRAMIA.

Bartramia pomiformis.

LEUCOBRYUM.

Leucobryum vulgare.

AULACOMNIUM.

Aulacomnium heterostichum.

Aulacomnium palustre.

THUIDIUM.

Thuidium delicatulum.

Thuidium recognitum.

PLAGIOTHECIUM.

Plagiothecium denticulatum.

FISSIDENS.

Fissidens adiantoides.

ATRICHUM.

Atrichum undulatum.

CLIMACIUM.

Climacium Americanum.

DICRANUM.

Dicranum scoparium.

LICHENS.

Ramalina calicaris, var *fraxinea* Lichen.

Ramalina calicaris, var *parinacea* Lichen.

Ramalina calicaris, var *fastigiata* Lichen.

Alectoria jubata, var *chalybeiformis* Lichen.

Evernia prunastri Lichen.

Usnea barbata, var *hista.* Lichen.

Theloschistes chrysophthalmus Lichen.

Physcia ciliaris Lichen.

Cladonia pyridata Lichen.

Cladonia fimbriata Lichen.

Cladonia furcata Lichen.

Cladonia rangiferina Lichen.

Pettigera aphthosa Lichen.

Sticta pulmonaria Lichen.

Leptogium tremelloides Lichen.

Parmenia plysodes Lichen.

Parmelia caperata Lichen.

Parmelia saratitidis, var *sulcata* Lichen.

Cetraria ciliaris Lichen.

Sticta amplissima Lichen.



3 9157 00008895 8

FOR USE IN SPECIAL COLLECTIONS ONLY

SPCL FC 3160.65 Q83 1886-1894

